

Experiment Number: 60311 - 05
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt
CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
Time Report Requested: 14:48:12
First Dose M/F: 05/08/06 / 05/08/06
Lab: BNW

F2_RD

NTP Study Number: C60311
Lock Date: 12/03/2008
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 2.6.0.0_007
PWG Approval Date: NONE

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**FOR ALL DOSES THE TUMOR RATES IN THE FOLLOWING TISSUES/ORGANS ARE BASED ON NUMBER OF TISSUES EXAMINED.
IN OTHER TISSUES/ORGANS RATES ARE BASED ON THE NUMBER OF ANIMALS NECROPSIED.**

Adrenal Medulla

Brain

Clitoral/Preputial Gland

Heart

Islets, Pancreatic

Kidney

Liver

Lung

Pituitary Gland

Testes

Thyroid Gland

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SUMMARY OF STATISTICALLY SIGNIFICANT (P<=.05) RESULTS IN THE ANALYSIS OF COBALT

MALE RATS

Organ

Adrenal Medulla

Islets, Pancreatic

Kidney: Renal Tubule

Lung

Skin

Testes

Zymbal's Gland

All Organs

FEMALE RATS

Organ

Adrenal Medulla

Clitoral/Preputial Gland

Islets, Pancreatic

Lung

Morphology

Pheochromocytoma Benign

Pheochromocytoma Malignant

Pheochromocytoma: Benign, Complex, Malignant, NOS

Adenoma

Carcinoma

Carcinoma or Adenoma

Adenoma

Carcinoma

Carcinoma or Adenoma

Alveolar/Bronchiolar Adenoma

Alveolar/Bronchiolar Carcinoma

Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma

Basal Cell Adenoma, Basosquamous Tumor Benign, or Trichoepithelioma

Basal Cell Carcinoma, Basal Cell Adenoma, Basosquamous Tumor (benign, malignant or NOS), or Trichoepithelioma

Fibrous Histiocytoma

Adenoma

Carcinoma

Carcinoma or Adenoma

Malignant Tumors

Morphology

Pheochromocytoma Benign

Pheochromocytoma Malignant

Pheochromocytoma: Benign, Complex, Malignant, NOS

Adenoma

Carcinoma

Carcinoma or Adenoma

Alveolar/Bronchiolar Adenoma

Alveolar/Bronchiolar Carcinoma

Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma

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SUMMARY OF STATISTICALLY SIGNIFICANT ($P \leq .05$) RESULTS IN THE ANALYSIS OF COBALT

Mammary Gland	Cystic Keratinizing Epithelioma Fibroadenoma Fibroma, Fibroadenoma or Adenoma Fibroma, Fibroadenoma, Carcinoma, or Adenoma
Pituitary Gland: Pars Distalis or Unspecified Site	Carcinoma
Thyroid Gland: C-Cell	Adenoma Carcinoma or Adenoma
All Organs	Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated Malignant Tumors Malignant and Benign Tumors

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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Medulla				
Pheochromocytoma Benign				
TUMOR RATES				
OVERALL (a)	15/50 (30%)	23/50 (46%)	37/50 (74%)	34/50 (68%)
POLY-3 RATE (b)	15/41.94	23/42.34	37/45.59	34/44.48
POLY-3 PERCENT (g)	35.8%	54.3%	81.2%	76.4%
TERMINAL (d)	3/17 (18%)	12/20 (60%)	15/16 (94%)	14/16 (88%)
FIRST INCIDENCE	519	583	582	572
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.059	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P=0.067	P<0.001**	P<0.001**
POLY 6	P<0.001**	P=0.048*	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.074	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.037*	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

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 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Medulla				
Pheochromocytoma Malignant				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	2/50 (4%)	9/50 (18%)	16/50 (32%)
POLY-3 RATE (b)	2/39.84	2/40.08	9/42.14	16/40.95
POLY-3 PERCENT (g)	5%	5%	21.4%	39.1%
TERMINAL (d)	0/17 (0%)	2/20 (10%)	3/16 (19%)	9/16 (56%)
FIRST INCIDENCE	668	729 (T)	628	646
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.693N	P=0.030*	P<0.001**
POLY 1.5	P<0.001**	P=0.691N	P=0.028*	P<0.001**
POLY 6	P<0.001**	P=0.694	P=0.030*	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.691N	P=0.026*	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.497N	P=0.015*	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

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DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Medulla				
Pheochromocytoma: Benign, Complex, Malignant, NOS				
TUMOR RATES				
OVERALL (a)	17/50 (34%)	23/50 (46%)	38/50 (76%)	41/50 (82%)
POLY-3 RATE (b)	17/42.30	23/42.34	38/45.95	41/45.22
POLY-3 PERCENT (g)	40.2%	54.3%	82.7%	90.7%
TERMINAL (d)	3/17 (18%)	12/20 (60%)	15/16 (94%)	16/16 (100%)
FIRST INCIDENCE	519	583	582	572
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.130	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P=0.143	P<0.001**	P<0.001**
POLY 6	P<0.001**	P=0.107	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.154	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.088	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

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 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Brain				
Oligodendroglioma Malignant				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.48	2/40.29	0/40.91	0/39.94
POLY-3 PERCENT (g)	0%	5%	0%	0%
TERMINAL (d)	0/17 (0%)	1/20 (5%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	675	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.203N	P=0.241	(e)	(e)
POLY 1.5	P=0.205N	P=0.240	(e)	(e)
POLY 6	P=0.202N	P=0.241	(e)	(e)
COCH-ARM / FISHERS	P=0.211N	P=0.247	(e)	(e)
MAX-ISO-POLY-3	P=0.263N	P=0.080	(e)	(e)
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

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 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Brain				
Oligodendroglioma, Glioma, or Astrocytoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/39.85	2/40.29	0/40.91	0/39.94
POLY-3 PERCENT (g)	2.5%	5%	0%	0%
TERMINAL (d)	0/17 (0%)	1/20 (5%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	626	675	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.113N	P=0.504	P=0.495N	P=0.500N
POLY 1.5	P=0.113N	P=0.503	P=0.496N	P=0.499N
POLY 6	P=0.113N	P=0.502	P=0.497N	P=0.502N
COCH-ARM / FISHERS	P=0.115N	P=0.500	P=0.500N	P=0.500N
MAX-ISO-POLY-3	P=0.182N	P=0.284	P=0.158N	P=0.158N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

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 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Clitoral/Preputial Gland Adenoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	1/50 (2%)	0/49 (0%)	0/48 (0%)
POLY-3 RATE (b)	1/39.48	1/40.08	0/40.04	0/38.07
POLY-3 PERCENT (g)	2.5%	2.5%	0%	0%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	0/15 (0%)
FIRST INCIDENCE	729 (T)	729 (T)	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

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 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Clitoral/Preputial Gland Carcinoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	0/50 (0%)	1/49 (2%)	3/48 (6%)
POLY-3 RATE (b)	2/40.15	0/40.08	1/40.48	3/38.65
POLY-3 PERCENT (g)	5%	0%	2.5%	7.8%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	1/15 (7%)
FIRST INCIDENCE	562	---	598	572
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.155	P=0.237N	P=0.497N	P=0.483
POLY 1.5	P=0.154	P=0.236N	P=0.499N	P=0.484
POLY 6	P=0.155	P=0.240N	P=0.499N	P=0.478
COCH-ARM / FISHERS	P=0.153	P=0.247N	P=0.508N	P=0.480
MAX-ISO-POLY-3	P=0.186	P=0.076N	P=0.279N	P=0.309
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

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 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Clitoral/Preputial Gland Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	3/50 (6%)	1/50 (2%)	1/49 (2%)	3/48 (6%)
POLY-3 RATE (b)	3/40.15	1/40.08	1/40.48	3/38.65
POLY-3 PERCENT (g)	7.5%	2.5%	2.5%	7.8%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	1/15 (7%)
FIRST INCIDENCE	562	729 (T)	598	572
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.406	P=0.305N	P=0.301N	P=0.646
POLY 1.5	P=0.405	P=0.304N	P=0.304N	P=0.647
POLY 6	P=0.407	P=0.309N	P=0.302N	P=0.643
COCH-ARM / FISHERS	P=0.402	P=0.309N	P=0.316N	P=0.641
MAX-ISO-POLY-3	P=0.384	P=0.153N	P=0.153N	P=0.480
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

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 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Heart				
Schwannoma Malignant				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	1/50 (2%)	1/50 (2%)	2/50 (4%)
POLY-3 RATE (b)	1/39.89	1/40.14	1/41.04	2/39.94
POLY-3 PERCENT (g)	2.5%	2.5%	2.4%	5%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	2/16 (13%)
FIRST INCIDENCE	611	715	698	729 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.343	P=0.760N	P=0.755N	P=0.500
POLY 1.5	P=0.344	P=0.759N	P=0.756N	P=0.502
POLY 6	P=0.340	P=0.761	P=0.757N	P=0.496
COCH-ARM / FISHERS	P=0.342	P=0.753N	P=0.753N	P=0.500
MAX-ISO-POLY-3	P=0.423	P=0.497N	P=0.491N	P=0.280
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

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 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Intestine Small: Site Unspecified Carcinoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.48	0/40.08	0/40.91	0/39.94
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	1/50 (2%)	6/48 (13%)	3/49 (6%)
POLY-3 RATE (b)	0/39.48	1/40.25	6/39.80	3/39.20
POLY-3 PERCENT (g)	0%	2.5%	15.1%	7.7%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	1/16 (6%)	3/16 (19%)
FIRST INCIDENCE	---	684	618	729 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.052	P=0.504	P=0.015*	P=0.116
POLY 1.5	P=0.053	P=0.503	P=0.014*	P=0.117
POLY 6	P=0.050*	P=0.504	P=0.015*	P=0.115
COCH-ARM / FISHERS	P=0.056	P=0.500	P=0.012*	P=0.117
MAX-ISO-POLY-3	P=0.030*	P=0.163	P=0.005**	P=0.037*
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Carcinoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	1/50 (2%)	5/48 (10%)	6/49 (12%)
POLY-3 RATE (b)	2/39.86	1/40.29	5/39.79	6/39.78
POLY-3 PERCENT (g)	5%	2.5%	12.6%	15.1%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	3/16 (19%)	2/16 (13%)
FIRST INCIDENCE	675	675	618	679
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.021*	P=0.496N	P=0.213	P=0.129
POLY 1.5	P=0.021*	P=0.496N	P=0.210	P=0.129
POLY 6	P=0.021*	P=0.499N	P=0.211	P=0.128
COCH-ARM / FISHERS	P=0.021*	P=0.500N	P=0.201	P=0.128
MAX-ISO-POLY-3	P=0.035*	P=0.278N	P=0.118	P=0.066
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	2/50 (4%)	10/48 (21%)	9/49 (18%)
POLY-3 RATE (b)	2/39.86	2/40.46	10/40.48	9/39.78
POLY-3 PERCENT (g)	5%	4.9%	24.7%	22.6%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	3/16 (19%)	5/16 (31%)
FIRST INCIDENCE	675	675	618	679
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.002**	P=0.689N	P=0.013*	P=0.022*
POLY 1.5	P=0.002**	P=0.690N	P=0.012*	P=0.023*
POLY 6	P=0.002**	P=0.691N	P=0.013*	P=0.021*
COCH-ARM / FISHERS	P=0.003**	P=0.691N	P=0.011*	P=0.023*
MAX-ISO-POLY-3	P=0.004**	P=0.493N	P=0.006**	P=0.010**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Kidney: Renal Tubule Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)	3/50 (6%)
POLY-3 RATE (b)	0/39.48	1/40.08	0/40.91	3/40.07
POLY-3 PERCENT (g)	0%	2.5%	0%	7.5%
TERMINAL (d)	0/17 (0%)	1/20 (5%)	0/16 (0%)	2/16 (13%)
FIRST INCIDENCE	---	729 (T)	---	696
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.061	P=0.503	(e)	P=0.120
POLY 1.5	P=0.061	P=0.502	(e)	P=0.120
POLY 6	P=0.061	P=0.503	(e)	P=0.119
COCH-ARM / FISHERS	P=0.061	P=0.500	(e)	P=0.121
MAX-ISO-POLY-3	P=0.027*	P=0.162	(e)	P=0.039*
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Kidney: Renal Tubule Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY-3 RATE (b)	0/39.48	0/40.08	0/40.91	2/40.07
POLY-3 PERCENT (g)	0%	0%	0%	5%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	---	---	---	696
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.043*	(e)	(e)	P=0.240
POLY 1.5	P=0.043*	(e)	(e)	P=0.240
POLY 6	P=0.042*	(e)	(e)	P=0.239
COCH-ARM / FISHERS	P=0.043*	(e)	(e)	P=0.247
MAX-ISO-POLY-3	P=0.038*	(e)	(e)	P=0.079
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Kidney: Renal Tubule Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)	4/50 (8%)
POLY-3 RATE (b)	0/39.48	1/40.08	0/40.91	4/40.07
POLY-3 PERCENT (g)	0%	2.5%	0%	10%
TERMINAL (d)	0/17 (0%)	1/20 (5%)	0/16 (0%)	3/16 (19%)
FIRST INCIDENCE	---	729 (T)	---	696
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.018*	P=0.503	(e)	P=0.061
POLY 1.5	P=0.018*	P=0.502	(e)	P=0.061
POLY 6	P=0.018*	P=0.503	(e)	P=0.060
COCH-ARM / FISHERS	P=0.019*	P=0.500	(e)	P=0.059
MAX-ISO-POLY-3	P=0.009**	P=0.162	(e)	P=0.020*
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma or Hepatocellular Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	0/39.48	1/40.67	0/40.91	1/40.24
POLY-3 PERCENT (g)	0%	2.5%	0%	2.5%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	540	---	646
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	0/39.48	1/40.67	0/40.91	1/40.24
POLY-3 PERCENT (g)	0%	2.5%	0%	2.5%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	540	---	646
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Adenoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	10/50 (20%)	10/50 (20%)	14/50 (28%)
POLY-3 RATE (b)	2/39.89	10/41.48	10/42.90	14/43.03
POLY-3 PERCENT (g)	5%	24.1%	23.3%	32.5%
TERMINAL (d)	1/17 (6%)	6/20 (30%)	2/16 (13%)	4/16 (25%)
FIRST INCIDENCE	611	577	535	478
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.011*	P=0.015*	P=0.018*	P<0.001**
POLY 1.5	P=0.010**	P=0.014*	P=0.016*	P<0.001**
POLY 6	P=0.013*	P=0.014*	P=0.019*	P<0.001**
COCH-ARM / FISHERS	P=0.009**	P=0.014*	P=0.014*	P<0.001**
MAX-ISO-POLY-3	P=0.002**	P=0.007**	P=0.010**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
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 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	16/50 (32%)	34/50 (68%)	36/50 (72%)
POLY-3 RATE (b)	0/39.48	16/41.86	34/44.27	36/44.68
POLY-3 PERCENT (g)	0%	38.2%	76.8%	80.6%
TERMINAL (d)	0/17 (0%)	7/20 (35%)	16/16 (100%)	14/16 (88%)
FIRST INCIDENCE	---	580	472	552
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	25/50 (50%)	39/50 (78%)	44/50 (88%)
POLY-3 RATE (b)	2/39.89	25/43.14	39/46.08	44/47.01
POLY-3 PERCENT (g)	5%	58%	84.6%	93.6%
TERMINAL (d)	1/17 (6%)	13/20 (65%)	16/16 (100%)	16/16 (100%)
FIRST INCIDENCE	611	577	472	478
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Cystic Keratinizing Epithelioma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	0/39.48	1/40.08	0/40.91	1/40.20
POLY-3 PERCENT (g)	0%	2.5%	0%	2.5%
TERMINAL (d)	0/17 (0%)	1/20 (5%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	729 (T)	---	660
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTEs	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTEs	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
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 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.48	0/40.08	0/40.91	0/39.94
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Carcinoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/39.64	0/40.08	0/40.91	0/39.94
POLY-3 PERCENT (g)	2.5%	0%	0%	0%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	688	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Carcinoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/39.64	0/40.08	0/40.91	0/39.94
POLY-3 PERCENT (g)	2.5%	0%	0%	0%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	688	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Fibroadenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	1/50 (2%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	1/39.48	1/40.08	0/40.91	1/39.94
POLY-3 PERCENT (g)	2.5%	2.5%	0%	2.5%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	729 (T)	729 (T)	---	729 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland				
Fibroma, Fibroadenoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	1/50 (2%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	1/39.48	1/40.08	0/40.91	1/39.94
POLY-3 PERCENT (g)	2.5%	2.5%	0%	2.5%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	729 (T)	729 (T)	---	729 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland				
Fibroma, Fibroadenoma, Carcinoma, or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	2/39.64	1/40.08	0/40.91	1/39.94
POLY-3 PERCENT (g)	5.1%	2.5%	0%	2.5%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	688	729 (T)	---	729 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.376N	P=0.496N	P=0.230N	P=0.497N
POLY 1.5	P=0.377N	P=0.496N	P=0.231N	P=0.497N
POLY 6	P=0.376N	P=0.498N	P=0.230N	P=0.500N
COCH-ARM / FISHERS	P=0.379N	P=0.500N	P=0.247N	P=0.500N
MAX-ISO-POLY-3	P=0.234N	P=0.277N	P=0.075N	P=0.278N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Pituitary Gland: Pars Distalis or Unspecified Site Adenoma				
TUMOR RATES				
OVERALL (a)	27/50 (54%)	32/50 (64%)	31/49 (63%)	24/49 (49%)
POLY-3 RATE (b)	27/44.60	32/47.29	31/45.48	24/43.58
POLY-3 PERCENT (g)	60.5%	67.7%	68.2%	55.1%
TERMINAL (d)	8/17 (47%)	10/20 (50%)	10/15 (67%)	6/15 (40%)
FIRST INCIDENCE	441	413	472	470
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.219N	P=0.305	P=0.289	P=0.377N
POLY 1.5	P=0.197N	P=0.268	P=0.274	P=0.368N
POLY 6	P=0.272N	P=0.341	P=0.282	P=0.414N
COCH-ARM / FISHERS	P=0.191N	P=0.208	P=0.232	P=0.383N
MAX-ISO-POLY-3	P=0.250N	P=0.238	P=0.220	P=0.297N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Pituitary Gland: Pars Distalis or Unspecified Site Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/49 (0%)	0/49 (0%)
POLY-3 RATE (b)	0/39.48	0/40.08	0/39.91	0/38.94
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/15 (0%)	0/15 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTEs	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTEs	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Pituitary Gland: Pars Distalis or Unspecified Site Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	27/50 (54%)	32/50 (64%)	31/49 (63%)	24/49 (49%)
POLY-3 RATE (b)	27/44.60	32/47.29	31/45.48	24/43.58
POLY-3 PERCENT (g)	60.5%	67.7%	68.2%	55.1%
TERMINAL (d)	8/17 (47%)	10/20 (50%)	10/15 (67%)	6/15 (40%)
FIRST INCIDENCE	441	413	472	470
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.219N	P=0.305	P=0.289	P=0.377N
POLY 1.5	P=0.197N	P=0.268	P=0.274	P=0.368N
POLY 6	P=0.272N	P=0.341	P=0.282	P=0.414N
COCH-ARM / FISHERS	P=0.191N	P=0.208	P=0.232	P=0.383N
MAX-ISO-POLY-3	P=0.250N	P=0.238	P=0.220	P=0.297N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Basal Cell Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	0/50 (0%)	1/50 (2%)	3/50 (6%)
POLY-3 RATE (b)	2/40.07	0/40.08	1/41.01	3/40.22
POLY-3 PERCENT (g)	5%	0%	2.4%	7.5%
TERMINAL (d)	1/17 (6%)	0/20 (0%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	542	---	705	689
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.165	P=0.236N	P=0.492N	P=0.502
POLY 1.5	P=0.165	P=0.236N	P=0.493N	P=0.503
POLY 6	P=0.165	P=0.238N	P=0.494N	P=0.500
COCH-ARM / FISHERS	P=0.165	P=0.247N	P=0.500N	P=0.500
MAX-ISO-POLY-3	P=0.199	P=0.075N	P=0.275N	P=0.324
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Basal Cell Adenoma, Basosquamous Tumor Benign, or Trichoepithelioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	4/50 (8%)	0/50 (0%)	1/50 (2%)	4/50 (8%)
POLY-3 RATE (b)	4/40.38	0/40.08	1/41.01	4/40.25
POLY-3 PERCENT (g)	9.9%	0%	2.4%	9.9%
TERMINAL (d)	1/17 (6%)	0/20 (0%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	542	---	705	689
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.248	P=0.060N	P=0.172N	P=0.643
POLY 1.5	P=0.247	P=0.060N	P=0.173N	P=0.643N
POLY 6	P=0.249	P=0.062N	P=0.175N	P=0.638
COCH-ARM / FISHERS	P=0.247	P=0.059N	P=0.181N	P=0.643N
MAX-ISO-POLY-3	P=0.209	P=0.019N*	P=0.081N	P=0.497
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Basal Cell Carcinoma, Basal Cell Adenoma, Basosquamous Tumor (benign, malignant or NOS), or Trichoepithelioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	4/50 (8%)	0/50 (0%)	2/50 (4%)	4/50 (8%)
POLY-3 RATE (b)	4/40.38	0/40.08	2/41.29	4/40.25
POLY-3 PERCENT (g)	9.9%	0%	4.8%	9.9%
TERMINAL (d)	1/17 (6%)	0/20 (0%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	542	---	652	689
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.229	P=0.060N	P=0.326N	P=0.643
POLY 1.5	P=0.229	P=0.060N	P=0.328N	P=0.643N
POLY 6	P=0.230	P=0.062N	P=0.328N	P=0.638
COCH-ARM / FISHERS	P=0.229	P=0.059N	P=0.339N	P=0.643N
MAX-ISO-POLY-3	P=0.289	P=0.019N*	P=0.193N	P=0.497
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Basal or Sq. Cell Carcinoma, Carcinoma, Basosq. Tumor (M or B), Basal Cell Adenoma, Adenoma, Papilloma, Sq Papilloma, Keratoacanthoma, Trichoepithelioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	8/50 (16%)	8/50 (16%)	8/50 (16%)	6/50 (12%)
POLY-3 RATE (b)	8/41.25	8/41.46	8/42.99	6/40.53
POLY-3 PERCENT (g)	19.4%	19.3%	18.6%	14.8%
TERMINAL (d)	3/17 (18%)	3/20 (15%)	0/16 (0%)	2/16 (13%)
FIRST INCIDENCE	376	580	582	652
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.322N	P=0.605N	P=0.574N	P=0.398N
POLY 1.5	P=0.319N	P=0.606N	P=0.586N	P=0.392N
POLY 6	P=0.328N	P=0.604N	P=0.559N	P=0.406N
COCH-ARM / FISHERS	P=0.316N	P=0.607N	P=0.607N	P=0.387N
MAX-ISO-POLY-3	P=0.479N	P=0.495N	P=0.463N	P=0.292N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibroma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	3/50 (6%)	3/50 (6%)	0/50 (0%)
POLY-3 RATE (b)	2/39.77	3/40.29	3/41.43	0/39.94
POLY-3 PERCENT (g)	5%	7.5%	7.2%	0%
TERMINAL (d)	0/17 (0%)	2/20 (10%)	1/16 (6%)	0/16 (0%)
FIRST INCIDENCE	682	674	628	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.137N	P=0.506	P=0.519	P=0.236N
POLY 1.5	P=0.138N	P=0.505	P=0.513	P=0.235N
POLY 6	P=0.139N	P=0.504	P=0.520	P=0.238N
COCH-ARM / FISHERS	P=0.140N	P=0.500	P=0.500	P=0.247N
MAX-ISO-POLY-3	P=0.149N	P=0.329	P=0.342	P=0.075N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibroma, Fibrosarcoma, Sarcoma, Myxoma, Myxosarcoma, or Fibrous Histiocytoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	3/50 (6%)	3/50 (6%)	2/50 (4%)
POLY-3 RATE (b)	2/39.77	3/40.29	3/41.43	2/41.06
POLY-3 PERCENT (g)	5%	7.5%	7.2%	4.9%
TERMINAL (d)	0/17 (0%)	2/20 (10%)	1/16 (6%)	0/16 (0%)
FIRST INCIDENCE	682	674	628	516
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.487N	P=0.506	P=0.519	P=0.683N
POLY 1.5	P=0.493N	P=0.505	P=0.513	P=0.686N
POLY 6	P=0.483N	P=0.504	P=0.520	P=0.682N
COCH-ARM / FISHERS	P=0.504N	P=0.500	P=0.500	P=0.691N
MAX-ISO-POLY-3	P=0.593N	P=0.329	P=0.342	P=0.486N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibrous Histiocytoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY-3 RATE (b)	0/39.48	0/40.08	0/40.91	2/41.06
POLY-3 PERCENT (g)	0%	0%	0%	4.9%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	---	---	516
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.044*	(e)	(e)	P=0.245
POLY 1.5	P=0.043*	(e)	(e)	P=0.243
POLY 6	P=0.044*	(e)	(e)	P=0.248
COCH-ARM / FISHERS	P=0.043*	(e)	(e)	P=0.247
MAX-ISO-POLY-3	P=0.043*	(e)	(e)	P=0.084
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Keratoacanthoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	4/50 (8%)	6/50 (12%)	7/50 (14%)	2/50 (4%)
POLY-3 RATE (b)	4/40.34	6/40.87	7/42.71	2/40.23
POLY-3 PERCENT (g)	9.9%	14.7%	16.4%	5%
TERMINAL (d)	3/17 (18%)	3/20 (15%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	376	580	582	652
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.212N	P=0.376	P=0.292	P=0.337N
POLY 1.5	P=0.212N	P=0.374	P=0.280	P=0.337N
POLY 6	P=0.211N	P=0.379	P=0.308	P=0.337N
COCH-ARM / FISHERS	P=0.214N	P=0.370	P=0.262	P=0.339N
MAX-ISO-POLY-3	P=0.185N	P=0.258	P=0.198	P=0.200N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Lipoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/40.30	1/40.08	0/40.91	0/39.94
POLY-3 PERCENT (g)	5%	2.5%	0%	0%
TERMINAL (d)	0/17 (0%)	1/20 (5%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	542	729 (T)	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.107N	P=0.502N	P=0.233N	P=0.239N
POLY 1.5	P=0.107N	P=0.500N	P=0.234N	P=0.237N
POLY 6	P=0.106N	P=0.508N	P=0.236N	P=0.242N
COCH-ARM / FISHERS	P=0.108N	P=0.500N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.086N	P=0.282N	P=0.075N	P=0.077N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Squamous Cell Papilloma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.48	2/40.68	0/40.91	0/39.94
POLY-3 PERCENT (g)	0%	4.9%	0%	0%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	618	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.202N	P=0.243	(e)	(e)
POLY 1.5	P=0.204N	P=0.241	(e)	(e)
POLY 6	P=0.200N	P=0.245	(e)	(e)
COCH-ARM / FISHERS	P=0.211N	P=0.247	(e)	(e)
MAX-ISO-POLY-3	P=0.265N	P=0.082	(e)	(e)
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Squamous Cell Papilloma or Papilloma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/39.48	2/40.68	0/40.91	0/39.94
POLY-3 PERCENT (g)	0%	4.9%	0%	0%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	---	618	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.202N	P=0.243	(e)	(e)
POLY 1.5	P=0.204N	P=0.241	(e)	(e)
POLY 6	P=0.200N	P=0.245	(e)	(e)
COCH-ARM / FISHERS	P=0.211N	P=0.247	(e)	(e)
MAX-ISO-POLY-3	P=0.265N	P=0.082	(e)	(e)
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Squamous Cell Papilloma, Papilloma, Squamous Cell Carcinoma or Keratoacanthoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	5/50 (10%)	8/50 (16%)	7/50 (14%)	2/50 (4%)
POLY-3 RATE (b)	5/40.35	8/41.46	7/42.71	2/40.23
POLY-3 PERCENT (g)	12.4%	19.3%	16.4%	5%
TERMINAL (d)	3/17 (18%)	3/20 (15%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	376	580	582	652
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.086N	P=0.290	P=0.418	P=0.215N
POLY 1.5	P=0.087N	P=0.284	P=0.403	P=0.215N
POLY 6	P=0.087N	P=0.301	P=0.439	P=0.214N
COCH-ARM / FISHERS	P=0.089N	P=0.277	P=0.380	P=0.218N
MAX-ISO-POLY-3	P=0.121N	P=0.199	P=0.307	P=0.118N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Squamous Cell Papilloma, Papilloma, or Keratoacanthoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	4/50 (8%)	8/50 (16%)	7/50 (14%)	2/50 (4%)
POLY-3 RATE (b)	4/40.34	8/41.46	7/42.71	2/40.23
POLY-3 PERCENT (g)	9.9%	19.3%	16.4%	5%
TERMINAL (d)	3/17 (18%)	3/20 (15%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	376	580	582	652
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.120N	P=0.186	P=0.292	P=0.337N
POLY 1.5	P=0.120N	P=0.182	P=0.280	P=0.337N
POLY 6	P=0.121N	P=0.193	P=0.308	P=0.337N
COCH-ARM / FISHERS	P=0.123N	P=0.178	P=0.262	P=0.339N
MAX-ISO-POLY-3	P=0.140N	P=0.116	P=0.198	P=0.200N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Trichoepithelioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	2/39.79	0/40.08	0/40.91	1/39.97
POLY-3 PERCENT (g)	5%	0%	0%	2.5%
TERMINAL (d)	0/17 (0%)	0/20 (0%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	682	---	---	722
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.558N	P=0.235N	P=0.230N	P=0.498N
POLY 1.5	P=0.559N	P=0.235N	P=0.232N	P=0.498N
POLY 6	P=0.557N	P=0.237N	P=0.232N	P=0.502N
COCH-ARM / FISHERS	P=0.560N	P=0.247N	P=0.247N	P=0.500N
MAX-ISO-POLY-3	P=0.141N	P=0.075N	P=0.075N	P=0.279N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Testes				
Adenoma				
TUMOR RATES				
OVERALL (a)	35/50 (70%)	39/50 (78%)	34/50 (68%)	29/50 (58%)
POLY-3 RATE (b)	35/44.53	39/44.70	34/44.54	29/44.49
POLY-3 PERCENT (g)	78.6%	87.3%	76.3%	65.2%
TERMINAL (d)	15/17 (88%)	19/20 (95%)	15/16 (94%)	10/16 (63%)
FIRST INCIDENCE	441	540	548	552
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.008N**	P=0.176	P=0.499N	P=0.103N
POLY 1.5	P=0.014N*	P=0.212	P=0.481N	P=0.117N
POLY 6	P=0.004N**	P=0.131	P=0.576N	P=0.089N
COCH-ARM / FISHERS	P=0.031N*	P=0.247	P=0.500N	P=0.149N
MAX-ISO-POLY-3	P=0.014N*	P=0.105	P=0.387N	P=0.064N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: C-Cell Adenoma				
TUMOR RATES				
OVERALL (a)	4/49 (8%)	8/50 (16%)	8/50 (16%)	7/49 (14%)
POLY-3 RATE (b)	4/39.06	8/41.00	8/42.27	7/40.01
POLY-3 PERCENT (g)	10.2%	19.5%	18.9%	17.5%
TERMINAL (d)	2/17 (12%)	5/20 (25%)	2/16 (13%)	4/16 (25%)
FIRST INCIDENCE	613	562	548	618
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.379	P=0.196	P=0.213	P=0.271
POLY 1.5	P=0.375	P=0.194	P=0.205	P=0.269
POLY 6	P=0.382	P=0.196	P=0.218	P=0.272
COCH-ARM / FISHERS	P=0.363	P=0.188	P=0.188	P=0.262
MAX-ISO-POLY-3	P=0.267	P=0.126	P=0.141	P=0.178
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: C-Cell Carcinoma				
TUMOR RATES				
OVERALL (a)	1/49 (2%)	2/50 (4%)	3/50 (6%)	1/49 (2%)
POLY-3 RATE (b)	1/38.72	2/40.08	3/41.30	1/39.40
POLY-3 PERCENT (g)	2.6%	5%	7.3%	2.5%
TERMINAL (d)	0/17 (0%)	2/20 (10%)	2/16 (13%)	0/16 (0%)
FIRST INCIDENCE	670	729 (T)	618	717
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.545N	P=0.512	P=0.328	P=0.757N
POLY 1.5	P=0.547N	P=0.511	P=0.324	P=0.758N
POLY 6	P=0.544N	P=0.511	P=0.329	P=0.758N
COCH-ARM / FISHERS	P=0.552N	P=0.508	P=0.316	P=0.753N
MAX-ISO-POLY-3	P=0.485N	P=0.292	P=0.176	P=0.494N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: C-Cell Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	5/49 (10%)	10/50 (20%)	11/50 (22%)	8/49 (16%)
POLY-3 RATE (b)	5/39.29	10/41.00	11/42.66	8/40.06
POLY-3 PERCENT (g)	12.7%	24.4%	25.8%	20%
TERMINAL (d)	2/17 (12%)	7/20 (35%)	4/16 (25%)	4/16 (25%)
FIRST INCIDENCE	613	562	548	618
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.411	P=0.143	P=0.110	P=0.284
POLY 1.5	P=0.407	P=0.144	P=0.104	P=0.283
POLY 6	P=0.414	P=0.138	P=0.112	P=0.282
COCH-ARM / FISHERS	P=0.395	P=0.140	P=0.093	P=0.276
MAX-ISO-POLY-3	P=0.202	P=0.091	P=0.072	P=0.193
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: Follicular Cell Carcinoma				
TUMOR RATES				
OVERALL (a)	2/49 (4%)	2/50 (4%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	2/38.73	2/40.51	0/40.91	0/39.35
POLY-3 PERCENT (g)	5.2%	4.9%	0%	0%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	668	603	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.063N	P=0.679N	P=0.224N	P=0.233N
POLY 1.5	P=0.064N	P=0.681N	P=0.227N	P=0.234N
POLY 6	P=0.063N	P=0.678N	P=0.225N	P=0.233N
COCH-ARM / FISHERS	P=0.065N	P=0.684N	P=0.242N	P=0.247N
MAX-ISO-POLY-3	P=0.106N	P=0.481N	P=0.074N	P=0.075N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: Follicular Cell Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	2/49 (4%)	2/50 (4%)	0/50 (0%)	0/49 (0%)
POLY-3 RATE (b)	2/38.73	2/40.51	0/40.91	0/39.35
POLY-3 PERCENT (g)	5.2%	4.9%	0%	0%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	668	603	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.063N	P=0.679N	P=0.224N	P=0.233N
POLY 1.5	P=0.064N	P=0.681N	P=0.227N	P=0.234N
POLY 6	P=0.063N	P=0.678N	P=0.225N	P=0.233N
COCH-ARM / FISHERS	P=0.065N	P=0.684N	P=0.242N	P=0.247N
MAX-ISO-POLY-3	P=0.106N	P=0.481N	P=0.074N	P=0.075N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Zymbal's Gland Carcinoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	3/50 (6%)	3/50 (6%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	3/40.73	3/40.60	0/40.91	1/39.99
POLY-3 PERCENT (g)	7.4%	7.4%	0%	2.5%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	383	603	---	717
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.102N	P=0.662	P=0.117N	P=0.311N
POLY 1.5	P=0.102N	P=0.663	P=0.117N	P=0.308N
POLY 6	P=0.103N	P=0.661	P=0.119N	P=0.316N
COCH-ARM / FISHERS	P=0.103N	P=0.661N	P=0.121N	P=0.309N
MAX-ISO-POLY-3	P=0.149N	P=0.498	P=0.037N*	P=0.160N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Zymbal's Gland Carcinoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	4/50 (8%)	3/50 (6%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	4/41.18	3/40.60	0/40.91	1/39.99
POLY-3 PERCENT (g)	9.7%	7.4%	0%	2.5%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	0/16 (0%)
FIRST INCIDENCE	383	603	---	717
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.063N	P=0.508N	P=0.060N	P=0.186N
POLY 1.5	P=0.063N	P=0.503N	P=0.060N	P=0.182N
POLY 6	P=0.064N	P=0.516N	P=0.062N	P=0.193N
COCH-ARM / FISHERS	P=0.064N	P=0.500N	P=0.059N	P=0.181N
MAX-ISO-POLY-3	P=0.068N	P=0.354N	P=0.019N*	P=0.091N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated				
TUMOR RATES	#	#	#	#
OVERALL (a)	21/50 (42%)	25/50 (50%)	22/50 (44%)	22/50 (44%)
POLY-3 RATE (b)	21/42.91	25/43.10	22/43.84	22/45.92
POLY-3 PERCENT (g)	48.9%	58%	50.2%	47.9%
TERMINAL (d)	7/17 (41%)	15/20 (75%)	7/16 (44%)	4/16 (25%)
FIRST INCIDENCE	519	540	582	478
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.296N	P=0.257	P=0.541	P=0.547N
POLY 1.5	P=0.350N	P=0.271	P=0.534	P=0.579
POLY 6	P=0.238N	P=0.225	P=0.527	P=0.508N
COCH-ARM / FISHERS	P=0.440N	P=0.274	P=0.500	P=0.500
MAX-ISO-POLY-3	P=0.478N	P=0.191	P=0.452	P=0.461N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Mesothelioma: Benign, Malignant, NOS				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	3/50 (6%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	2/40.26	3/40.56	0/40.91	1/39.94
POLY-3 PERCENT (g)	5%	7.4%	0%	2.5%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	441	663	---	729 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.163N	P=0.503	P=0.233N	P=0.503N
POLY 1.5	P=0.163N	P=0.503	P=0.234N	P=0.501N
POLY 6	P=0.164N	P=0.505	P=0.234N	P=0.507N
COCH-ARM / FISHERS	P=0.165N	P=0.500	P=0.247N	P=0.500N
MAX-ISO-POLY-3	P=0.204N	P=0.326	P=0.075N	P=0.283N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Mesothelioma: Malignant				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	3/50 (6%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	2/40.26	3/40.56	0/40.91	1/39.94
POLY-3 PERCENT (g)	5%	7.4%	0%	2.5%
TERMINAL (d)	1/17 (6%)	1/20 (5%)	0/16 (0%)	1/16 (6%)
FIRST INCIDENCE	441	663	---	729 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.163N	P=0.503	P=0.233N	P=0.503N
POLY 1.5	P=0.163N	P=0.503	P=0.234N	P=0.501N
POLY 6	P=0.164N	P=0.505	P=0.234N	P=0.507N
COCH-ARM / FISHERS	P=0.165N	P=0.500	P=0.247N	P=0.500N
MAX-ISO-POLY-3	P=0.204N	P=0.326	P=0.075N	P=0.283N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Benign Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	47/50 (94%)	49/50 (98%)	49/50 (98%)	47/50 (94%)
POLY-3 RATE (b)	47/48.24	49/49.54	49/49.58	47/48.51
POLY-3 PERCENT (g)	97.4%	98.9%	98.8%	96.9%
TERMINAL (d)	17/17 (100%)	20/20 (100%)	16/16 (100%)	16/16 (100%)
FIRST INCIDENCE	376	413	472	470
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.436N	P=0.613	P=0.627	P=0.719N
POLY 1.5	P=0.421N	P=0.457	P=0.466	P=0.684N
POLY 6	P=0.464N	P=0.881	P=0.886	P=0.785N
COCH-ARM / FISHERS	P=0.421N	P=0.309	P=0.309	P=0.661N
MAX-ISO-POLY-3	P=0.400N	P=0.231	P=0.250	P=0.414N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 01/18/2012

Time Report Requested: 14:48:12

First Dose M/F: 05/08/06 / 05/08/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	31/50 (62%)	37/50 (74%)	42/50 (84%)	48/50 (96%)
POLY-3 RATE (b)	31/46.73	37/44.88	42/46.82	48/49.27
POLY-3 PERCENT (g)	66.3%	82.4%	89.7%	97.4%
TERMINAL (d)	7/17 (41%)	18/20 (90%)	16/16 (100%)	15/16 (94%)
FIRST INCIDENCE	383	540	472	478
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.051	P=0.003**	P<0.001**
POLY 1.5	P<0.001**	P=0.084	P=0.006**	P<0.001**
POLY 6	P<0.001**	P=0.024*	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.142	P=0.012*	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.032*	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Males			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant and Benign Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	50/50 (100%)	50/50 (100%)	49/50 (98%)	50/50 (100%)
POLY-3 RATE (b)	50/50.00	50/50.00	49/49.58	50/50.00
POLY-3 PERCENT (g)	100%	100%	98.8%	100%
TERMINAL (d)	17/17 (100%)	20/20 (100%)	16/16 (100%)	16/16 (100%)
FIRST INCIDENCE	376	413	472	470
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.776N	(e)	P=0.761N	(e)
POLY 1.5	P=0.695N	(e)	P=0.620N	(e)
POLY 6	P=0.935N	(e)	P=0.973N	(e)
COCH-ARM / FISHERS	P=0.626N	(e)	P=0.500N	(e)
MAX-ISO-POLY-3	P=0.393N	(e)	P=0.160N	(e)
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Medulla				
Pheochromocytoma Benign				
TUMOR RATES				
OVERALL (a)	6/50 (12%)	12/50 (24%)	22/50 (44%)	36/50 (72%)
POLY-3 RATE (b)	6/44.10	12/44.16	22/42.24	36/44.68
POLY-3 PERCENT (g)	13.6%	27.2%	52.1%	80.6%
TERMINAL (d)	6/35 (17%)	5/26 (19%)	13/24 (54%)	21/25 (84%)
FIRST INCIDENCE	730 (T)	598	590	579
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.091	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P=0.096	P<0.001**	P<0.001**
POLY 6	P<0.001**	P=0.082	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.096	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.054	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Medulla				
Pheochromocytoma Malignant				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	2/50 (4%)	3/50 (6%)	11/50 (22%)
POLY-3 RATE (b)	0/44.10	2/42.33	3/40.17	11/40.82
POLY-3 PERCENT (g)	0%	4.7%	7.5%	27%
TERMINAL (d)	0/35 (0%)	2/26 (8%)	2/24 (8%)	9/25 (36%)
FIRST INCIDENCE	---	730 (T)	715	712
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.228	P=0.102	P<0.001**
POLY 1.5	P<0.001**	P=0.234	P=0.110	P<0.001**
POLY 6	P<0.001**	P=0.216	P=0.092	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.247	P=0.121	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.076	P=0.037*	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adrenal Medulla				
Pheochromocytoma: Benign, Complex, Malignant, NOS				
TUMOR RATES				
OVERALL (a)	6/50 (12%)	13/50 (26%)	23/50 (46%)	40/50 (80%)
POLY-3 RATE (b)	6/44.10	13/44.16	23/42.24	40/44.73
POLY-3 PERCENT (g)	13.6%	29.4%	54.5%	89.4%
TERMINAL (d)	6/35 (17%)	6/26 (23%)	14/24 (58%)	24/25 (96%)
FIRST INCIDENCE	730 (T)	598	590	579
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.058	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P=0.062	P<0.001**	P<0.001**
POLY 6	P<0.001**	P=0.051	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.062	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P=0.033*	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Brain				
Oligodendroglioma Malignant				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Brain				
Oligodendroglioma, Glioma, or Astrocytoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	1/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	2.5%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	1/24 (4%)	0/25 (0%)
FIRST INCIDENCE	---	---	730 (T)	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Clitoral/Preputial Gland Adenoma				
TUMOR RATES				
OVERALL (a)	2/49 (4%)	5/47 (11%)	6/47 (13%)	2/46 (4%)
POLY-3 RATE (b)	2/44.28	5/40.53	6/37.25	2/37.32
POLY-3 PERCENT (g)	4.5%	12.3%	16.1%	5.4%
TERMINAL (d)	1/35 (3%)	1/23 (4%)	6/22 (27%)	1/22 (5%)
FIRST INCIDENCE	674	593	730 (T)	691
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.517N	P=0.181	P=0.083	P=0.631
POLY 1.5	P=0.483N	P=0.191	P=0.097	P=0.649
POLY 6	P=0.563N	P=0.165	P=0.065	P=0.606
COCH-ARM / FISHERS	P=0.439N	P=0.201	P=0.121	P=0.667
MAX-ISO-POLY-3	P=0.268	P=0.103	P=0.050*	P=0.434
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Clitoral/Preputial Gland Carcinoma				
TUMOR RATES				
OVERALL (a)	4/49 (8%)	5/47 (11%)	3/47 (6%)	4/46 (9%)
POLY-3 RATE (b)	4/44.10	5/39.97	3/37.73	4/37.91
POLY-3 PERCENT (g)	9.1%	12.5%	8%	10.6%
TERMINAL (d)	3/35 (9%)	1/23 (4%)	1/22 (5%)	2/22 (9%)
FIRST INCIDENCE	722	646	618	478
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.524N	P=0.438	P=0.585N	P=0.558
POLY 1.5	P=0.502N	P=0.457	P=0.561N	P=0.582
POLY 6	P=0.556N	P=0.409	P=0.620N	P=0.525
COCH-ARM / FISHERS	P=0.472N	P=0.473	P=0.524N	P=0.607
MAX-ISO-POLY-3	P=0.645	P=0.313	P=0.432N	P=0.414
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Clitoral/Preputial Gland Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	6/49 (12%)	10/47 (21%)	9/47 (19%)	6/46 (13%)
POLY-3 RATE (b)	6/44.31	10/41.17	9/37.73	6/38.06
POLY-3 PERCENT (g)	13.5%	24.3%	23.9%	15.8%
TERMINAL (d)	4/35 (11%)	2/23 (9%)	7/22 (32%)	3/22 (14%)
FIRST INCIDENCE	674	593	618	478
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.480N	P=0.159	P=0.179	P=0.511
POLY 1.5	P=0.438N	P=0.170	P=0.209	P=0.541
POLY 6	P=0.540N	P=0.142	P=0.139	P=0.468
COCH-ARM / FISHERS	P=0.388N	P=0.181	P=0.258	P=0.575
MAX-ISO-POLY-3	P=0.323	P=0.106	P=0.129	P=0.392
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Heart				
Schwannoma Malignant				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	1/40.37	0/40.70
POLY-3 PERCENT (g)	0%	0%	2.5%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	661	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Intestine Small: Site Unspecified Carcinoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	2/44.38	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	4.5%	0%	0%	0%
TERMINAL (d)	1/35 (3%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	654	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.185N	P=0.248N	P=0.260N	P=0.257N
POLY 1.5	P=0.187N	P=0.241N	P=0.250N	P=0.246N
POLY 6	P=0.181N	P=0.261N	P=0.278N	P=0.272N
COCH-ARM / FISHERS	P=0.187N	P=0.247N	P=0.247N	P=0.247N
MAX-ISO-POLY-3	P=0.053N	P=0.086N	P=0.098N	P=0.095N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	1/40.70
POLY-3 PERCENT (g)	0%	0%	0%	2.5%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	1/25 (4%)
FIRST INCIDENCE	---	---	---	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTEs	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTEs	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Carcinoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	0/50 (0%)	0/50 (0%)	3/50 (6%)
POLY-3 RATE (b)	1/45.07	0/42.33	0/40.11	3/41.87
POLY-3 PERCENT (g)	2.2%	0%	0%	7.2%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	1/25 (4%)
FIRST INCIDENCE	234	---	---	506
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.060	P=0.512N	P=0.523N	P=0.279
POLY 1.5	P=0.061	P=0.506N	P=0.514N	P=0.291
POLY 6	P=0.058	P=0.523N	P=0.537N	P=0.263
COCH-ARM / FISHERS	P=0.065	P=0.500N	P=0.500N	P=0.309
MAX-ISO-POLY-3	P=0.046*	P=0.174N	P=0.187N	P=0.145
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Islets, Pancreatic Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	0/50 (0%)	0/50 (0%)	3/50 (6%)
POLY-3 RATE (b)	1/45.07	0/42.33	0/40.11	3/41.87
POLY-3 PERCENT (g)	2.2%	0%	0%	7.2%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	1/25 (4%)
FIRST INCIDENCE	234	---	---	506
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.060	P=0.512N	P=0.523N	P=0.279
POLY 1.5	P=0.061	P=0.506N	P=0.514N	P=0.291
POLY 6	P=0.058	P=0.523N	P=0.537N	P=0.263
COCH-ARM / FISHERS	P=0.065	P=0.500N	P=0.500N	P=0.309
MAX-ISO-POLY-3	P=0.046*	P=0.174N	P=0.187N	P=0.145
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Kidney: Renal Tubule Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Kidney: Renal Tubule Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Kidney: Renal Tubule Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTEs	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTEs	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma or Hepatocellular Adenoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	2/42.64	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	4.7%	0%	0%
TERMINAL (d)	0/35 (0%)	1/26 (4%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	646	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.225N	P=0.229	(e)	(e)
POLY 1.5	P=0.216N	P=0.235	(e)	(e)
POLY 6	P=0.240N	P=0.219	(e)	(e)
COCH-ARM / FISHERS	P=0.211N	P=0.247	(e)	(e)
MAX-ISO-POLY-3	P=0.284N	P=0.076	(e)	(e)
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Liver				
Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	2/42.64	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	4.7%	0%	0%
TERMINAL (d)	0/35 (0%)	1/26 (4%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	6/46	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.225N	P=0.229	(e)	(e)
POLY 1.5	P=0.216N	P=0.235	(e)	(e)
POLY 6	P=0.240N	P=0.219	(e)	(e)
COCH-ARM / FISHERS	P=0.211N	P=0.247	(e)	(e)
MAX-ISO-POLY-3	P=0.284N	P=0.076	(e)	(e)
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Adenoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	7/50 (14%)	9/50 (18%)	13/50 (26%)
POLY-3 RATE (b)	2/44.22	7/43.18	9/40.82	13/42.04
POLY-3 PERCENT (g)	4.5%	16.2%	22.1%	30.9%
TERMINAL (d)	1/35 (3%)	5/26 (19%)	6/24 (25%)	8/25 (32%)
FIRST INCIDENCE	698	590	587	579
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.002**	P=0.072	P=0.016*	P<0.001**
POLY 1.5	P=0.002**	P=0.078	P=0.020*	P<0.001**
POLY 6	P<0.001**	P=0.062	P=0.012*	P<0.001**
COCH-ARM / FISHERS	P=0.004**	P=0.080	P=0.026*	P=0.002**
MAX-ISO-POLY-3	P<0.001**	P=0.036*	P=0.009**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	9/50 (18%)	17/50 (34%)	30/50 (60%)
POLY-3 RATE (b)	0/44.10	9/42.33	17/40.52	30/43.33
POLY-3 PERCENT (g)	0%	21.3%	42%	69.2%
TERMINAL (d)	0/35 (0%)	9/26 (35%)	14/24 (58%)	20/25 (80%)
FIRST INCIDENCE	---	730 (T)	690	471
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P=0.002**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma				
TUMOR RATES				
OVERALL (a)	2/50 (4%)	15/50 (30%)	20/50 (40%)	38/50 (76%)
POLY-3 RATE (b)	2/44.22	15/43.18	20/41.22	38/44.07
POLY-3 PERCENT (g)	4.5%	34.7%	48.5%	86.2%
TERMINAL (d)	1/35 (3%)	13/26 (50%)	14/24 (58%)	25/25 (100%)
FIRST INCIDENCE	698	590	587	471
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lung				
Cystic Keratinizing Epithelioma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	4/50 (8%)	1/50 (2%)	2/50 (4%)
POLY-3 RATE (b)	0/44.10	4/42.33	1/40.11	2/41.13
POLY-3 PERCENT (g)	0%	9.5%	2.5%	4.9%
TERMINAL (d)	0/35 (0%)	4/26 (15%)	1/24 (4%)	1/25 (4%)
FIRST INCIDENCE	---	730 (T)	730 (T)	603
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.582	P=0.055	P=0.481	P=0.222
POLY 1.5	P=0.585N	P=0.059	P=0.490	P=0.230
POLY 6	P=0.552	P=0.048*	P=0.467	P=0.211
COCH-ARM / FISHERS	P=0.568N	P=0.059	P=0.500	P=0.247
MAX-ISO-POLY-3	P=0.167	P=0.019*	P=0.158	P=0.075
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	2/50 (4%)	1/50 (2%)	1/50 (2%)
POLY-3 RATE (b)	1/44.10	2/42.72	1/40.11	1/40.70
POLY-3 PERCENT (g)	2.3%	4.7%	2.5%	2.5%
TERMINAL (d)	1/35 (3%)	1/26 (4%)	1/24 (4%)	1/25 (4%)
FIRST INCIDENCE	730 (T)	618	730 (T)	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.481N	P=0.489	P=0.739	P=0.743
POLY 1.5	P=0.468N	P=0.497	P=0.749	P=0.752
POLY 6	P=0.500N	P=0.473	P=0.723	P=0.729
COCH-ARM / FISHERS	P=0.453N	P=0.500	P=0.753N	P=0.753N
MAX-ISO-POLY-3	P=0.621N	P=0.274	P=0.473	P=0.477
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Carcinoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	5/50 (10%)	1/50 (2%)	3/50 (6%)
POLY-3 RATE (b)	2/44.22	5/42.92	1/40.11	3/40.70
POLY-3 PERCENT (g)	4.5%	11.7%	2.5%	7.4%
TERMINAL (d)	1/35 (3%)	3/26 (12%)	1/24 (4%)	3/25 (12%)
FIRST INCIDENCE	698	578	730 (T)	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.446N	P=0.203	P=0.534N	P=0.462
POLY 1.5	P=0.426N	P=0.213	P=0.519N	P=0.482
POLY 6	P=0.478N	P=0.185	P=0.559N	P=0.433
COCH-ARM / FISHERS	P=0.405N	P=0.218	P=0.500N	P=0.500
MAX-ISO-POLY-3	P=0.468N	P=0.113	P=0.317N	P=0.298
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Carcinoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	3/50 (6%)	7/50 (14%)	1/50 (2%)	4/50 (8%)
POLY-3 RATE (b)	3/44.22	7/43.31	1/40.11	4/40.70
POLY-3 PERCENT (g)	6.8%	16.2%	2.5%	9.8%
TERMINAL (d)	2/35 (6%)	4/26 (15%)	1/24 (4%)	4/25 (16%)
FIRST INCIDENCE	698	578	730 (T)	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.345N	P=0.147	P=0.341N	P=0.455
POLY 1.5	P=0.323N	P=0.156	P=0.325N	P=0.479
POLY 6	P=0.381N	P=0.131	P=0.368N	P=0.420
COCH-ARM / FISHERS	P=0.301N	P=0.159	P=0.309N	P=0.500
MAX-ISO-POLY-3	P=0.340N	P=0.085	P=0.190N	P=0.313
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Fibroadenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	18/50 (36%)	22/50 (44%)	15/50 (30%)	5/50 (10%)
POLY-3 RATE (b)	18/45.76	22/44.45	15/41.69	5/40.70
POLY-3 PERCENT (g)	39.3%	49.5%	36%	12.3%
TERMINAL (d)	14/35 (40%)	16/26 (62%)	9/24 (38%)	5/25 (20%)
FIRST INCIDENCE	316	516	590	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.220	P=0.459N	P=0.003N**
POLY 1.5	P<0.001N**	P=0.250	P=0.408N	P=0.002N**
POLY 6	P<0.001N**	P=0.169	P=0.538N	P=0.006N**
COCH-ARM / FISHERS	P<0.001N**	P=0.270	P=0.335N	P=0.002N**
MAX-ISO-POLY-3	P<0.001N**	P=0.165	P=0.376N	P=0.002N**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland Fibroma, Fibroadenoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	19/50 (38%)	23/50 (46%)	16/50 (32%)	6/50 (12%)
POLY-3 RATE (b)	19/45.76	23/44.84	16/41.69	6/40.70
POLY-3 PERCENT (g)	41.5%	51.3%	38.4%	14.7%
TERMINAL (d)	15/35 (43%)	16/26 (62%)	10/24 (42%)	6/25 (24%)
FIRST INCIDENCE	316	516	590	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.231	P=0.467N	P=0.005N**
POLY 1.5	P<0.001N**	P=0.258	P=0.414N	P=0.003N**
POLY 6	P<0.001N**	P=0.185	P=0.551N	P=0.008N**
COCH-ARM / FISHERS	P<0.001N**	P=0.272	P=0.338N	P=0.002N**
MAX-ISO-POLY-3	P<0.001N**	P=0.174	P=0.384N	P=0.003N**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Mammary Gland				
Fibroma, Fibroadenoma, Carcinoma, or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	20/50 (40%)	26/50 (52%)	16/50 (32%)	9/50 (18%)
POLY-3 RATE (b)	20/45.88	26/45.43	16/41.69	9/40.70
POLY-3 PERCENT (g)	43.6%	57.2%	38.4%	22.1%
TERMINAL (d)	15/35 (43%)	17/26 (65%)	10/24 (42%)	9/25 (36%)
FIRST INCIDENCE	316	516	590	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001N**	P=0.131	P=0.389N	P=0.026N*
POLY 1.5	P<0.001N**	P=0.149	P=0.337N	P=0.018N*
POLY 6	P=0.003N**	P=0.100	P=0.477N	P=0.045N*
COCH-ARM / FISHERS	P<0.001N**	P=0.158	P=0.266N	P=0.013N*
MAX-ISO-POLY-3	P=0.002N**	P=0.092	P=0.316N	P=0.020N*
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Pituitary Gland: Pars Distalis or Unspecified Site Adenoma				
TUMOR RATES				
OVERALL (a)	29/50 (58%)	23/50 (46%)	26/49 (53%)	22/50 (44%)
POLY-3 RATE (b)	29/47.16	23/44.57	26/43.41	22/43.96
POLY-3 PERCENT (g)	61.5%	51.6%	59.9%	50.1%
TERMINAL (d)	20/35 (57%)	14/26 (54%)	15/24 (63%)	11/25 (44%)
FIRST INCIDENCE	511	593	291	506
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.287N	P=0.223N	P=0.525N	P=0.183N
POLY 1.5	P=0.253N	P=0.180N	P=0.457N	P=0.142N
POLY 6	P=0.329N	P=0.309N	P=0.548	P=0.246N
COCH-ARM / FISHERS	P=0.219N	P=0.158N	P=0.385N	P=0.115N
MAX-ISO-POLY-3	P=0.227N	P=0.172N	P=0.438N	P=0.139N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Pituitary Gland: Pars Distalis or Unspecified Site Carcinoma				
TUMOR RATES				
OVERALL (a)	0/50 (0%)	3/50 (6%)	1/49 (2%)	1/50 (2%)
POLY-3 RATE (b)	0/44.10	3/43.28	1/39.46	1/40.70
POLY-3 PERCENT (g)	0%	6.9%	2.5%	2.5%
TERMINAL (d)	0/35 (0%)	1/26 (4%)	1/24 (4%)	1/25 (4%)
FIRST INCIDENCE	---	578	730 (T)	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.497N	P=0.115	P=0.478	P=0.484
POLY 1.5	P=0.481N	P=0.119	P=0.486	P=0.492
POLY 6	P=0.523N	P=0.108	P=0.465	P=0.472
COCH-ARM / FISHERS	P=0.466N	P=0.121	P=0.495	P=0.500
MAX-ISO-POLY-3	P=0.242	P=0.038*	P=0.157	P=0.158
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Pituitary Gland: Pars Distalis or Unspecified Site Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	29/50 (58%)	26/50 (52%)	27/49 (55%)	23/50 (46%)
POLY-3 RATE (b)	29/47.16	26/45.53	27/43.41	23/43.96
POLY-3 PERCENT (g)	61.5%	57.1%	62.2%	52.3%
TERMINAL (d)	20/35 (57%)	15/26 (58%)	16/24 (67%)	12/25 (48%)
FIRST INCIDENCE	511	578	291	506
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.279N	P=0.412N	P=0.559	P=0.247N
POLY 1.5	P=0.232N	P=0.364N	P=0.545N	P=0.195N
POLY 6	P=0.341N	P=0.497N	P=0.451	P=0.324N
COCH-ARM / FISHERS	P=0.187N	P=0.344N	P=0.465N	P=0.158N
MAX-ISO-POLY-3	P=0.313N	P=0.333N	P=0.471	P=0.192N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Basal Cell Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	2.3%	0%	0%	0%
TERMINAL (d)	1/35 (3%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	730 (T)	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Basal Cell Adenoma, Basosquamous Tumor Benign, or Trichoepithelioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	2.3%	0%	0%	0%
TERMINAL (d)	1/35 (3%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	730 (T)	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Basal Cell Carcinoma, Basal Cell Adenoma, Basosquamous Tumor (benign, malignant or NOS), or Trichoepithelioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	2.3%	0%	0%	0%
TERMINAL (d)	1/35 (3%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	730 (T)	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Basal or Sq. Cell Carcinoma, Carcinoma, Basosq. Tumor (M or B), Basal Cell Adenoma, Adenoma, Papilloma, Sq Papilloma, Keratoacanthoma, Trichoepithelioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	1/50 (2%)	3/50 (6%)	1/50 (2%)
POLY-3 RATE (b)	2/44.10	1/42.33	3/40.11	1/40.70
POLY-3 PERCENT (g)	4.5%	2.4%	7.5%	2.5%
TERMINAL (d)	2/35 (6%)	1/26 (4%)	3/24 (13%)	1/25 (4%)
FIRST INCIDENCE	730 (T)	730 (T)	730 (T)	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.570N	P=0.514N	P=0.457	P=0.528N
POLY 1.5	P=0.556N	P=0.504N	P=0.476	P=0.513N
POLY 6	P=0.587N	P=0.533N	P=0.425	P=0.549N
COCH-ARM / FISHERS	P=0.540N	P=0.500N	P=0.500	P=0.500N
MAX-ISO-POLY-3	P=0.493N	P=0.296N	P=0.294	P=0.311N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibroma				
TUMOR RATES	#	#	#	#
OVERALL (a)	2/50 (4%)	1/50 (2%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	2/44.31	1/42.33	0/40.11	1/40.70
POLY-3 PERCENT (g)	4.5%	2.4%	0%	2.5%
TERMINAL (d)	1/35 (3%)	1/26 (4%)	0/24 (0%)	1/25 (4%)
FIRST INCIDENCE	674	730 (T)	---	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.392N	P=0.516N	P=0.260N	P=0.530N
POLY 1.5	P=0.387N	P=0.505N	P=0.250N	P=0.514N
POLY 6	P=0.399N	P=0.536N	P=0.278N	P=0.552N
COCH-ARM / FISHERS	P=0.379N	P=0.500N	P=0.247N	P=0.500N
MAX-ISO-POLY-3	P=0.284N	P=0.298N	P=0.097N	P=0.313N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibroma, Fibrosarcoma, Sarcoma, Myxoma, Myxosarcoma, or Fibrous Histiocytoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	3/50 (6%)	3/50 (6%)	0/50 (0%)	1/50 (2%)
POLY-3 RATE (b)	3/45.23	3/43.19	0/40.11	1/40.70
POLY-3 PERCENT (g)	6.6%	7%	0%	2.5%
TERMINAL (d)	1/35 (3%)	1/26 (4%)	0/24 (0%)	1/25 (4%)
FIRST INCIDENCE	316	422	---	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.118N	P=0.641	P=0.141N	P=0.344N
POLY 1.5	P=0.112N	P=0.654	P=0.132N	P=0.326N
POLY 6	P=0.128N	P=0.616	P=0.158N	P=0.370N
COCH-ARM / FISHERS	P=0.103N	P=0.661N	P=0.121N	P=0.309N
MAX-ISO-POLY-3	P=0.181N	P=0.476	P=0.058N	P=0.193N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Fibrous Histiocytoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/45.02	2/43.19	0/40.11	0/40.70
POLY-3 PERCENT (g)	2.2%	4.6%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	316	422	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.127N	P=0.486	P=0.523N	P=0.520N
POLY 1.5	P=0.122N	P=0.495	P=0.514N	P=0.511N
POLY 6	P=0.136N	P=0.469	P=0.537N	P=0.533N
COCH-ARM / FISHERS	P=0.115N	P=0.500	P=0.500N	P=0.500N
MAX-ISO-POLY-3	P=0.212N	P=0.272	P=0.186N	P=0.183N
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
TERMINAL SACRIFICE AT 105 WEEKS

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Keratoacanthoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	2/50 (4%)	1/50 (2%)
POLY-3 RATE (b)	0/44.10	0/42.33	2/40.11	1/40.70
POLY-3 PERCENT (g)	0%	0%	5%	2.5%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	2/24 (8%)	1/25 (4%)
FIRST INCIDENCE	---	---	730 (T)	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.175	(e)	P=0.216	P=0.484
POLY 1.5	P=0.184	(e)	P=0.226	P=0.492
POLY 6	P=0.165	(e)	P=0.202	P=0.472
COCH-ARM / FISHERS	P=0.194	(e)	P=0.247	P=0.500
MAX-ISO-POLY-3	P=0.177	(e)	P=0.075	P=0.158
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Lipoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/44.76	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	2.2%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	511	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Squamous Cell Papilloma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	1/44.10	0/42.33	1/40.11	0/40.70
POLY-3 PERCENT (g)	2.3%	0%	2.5%	0%
TERMINAL (d)	1/35 (3%)	0/26 (0%)	1/24 (4%)	0/25 (0%)
FIRST INCIDENCE	730 (T)	---	730 (T)	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Squamous Cell Papilloma or Papilloma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	1/50 (2%)	1/50 (2%)	0/50 (0%)
POLY-3 RATE (b)	1/44.10	1/42.33	1/40.11	0/40.70
POLY-3 PERCENT (g)	2.3%	2.4%	2.5%	0%
TERMINAL (d)	1/35 (3%)	1/26 (4%)	1/24 (4%)	0/25 (0%)
FIRST INCIDENCE	730 (T)	730 (T)	730 (T)	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Squamous Cell Papilloma, Papilloma, Squamous Cell Carcinoma or Keratoacanthoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	1/50 (2%)	3/50 (6%)	1/50 (2%)
POLY-3 RATE (b)	1/44.10	1/42.33	3/40.11	1/40.70
POLY-3 PERCENT (g)	2.3%	2.4%	7.5%	2.5%
TERMINAL (d)	1/35 (3%)	1/26 (4%)	3/24 (13%)	1/25 (4%)
FIRST INCIDENCE	730 (T)	730 (T)	730 (T)	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.469	P=0.752	P=0.272	P=0.743
POLY 1.5	P=0.487	P=0.758	P=0.287	P=0.752
POLY 6	P=0.448	P=0.740	P=0.248	P=0.729
COCH-ARM / FISHERS	P=0.505	P=0.753N	P=0.309	P=0.753N
MAX-ISO-POLY-3	P=0.425	P=0.488	P=0.142	P=0.477
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Squamous Cell Papilloma, Papilloma, or Keratoacanthoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	1/50 (2%)	1/50 (2%)	3/50 (6%)	1/50 (2%)
POLY-3 RATE (b)	1/44.10	1/42.33	3/40.11	1/40.70
POLY-3 PERCENT (g)	2.3%	2.4%	7.5%	2.5%
TERMINAL (d)	1/35 (3%)	1/26 (4%)	3/24 (13%)	1/25 (4%)
FIRST INCIDENCE	730 (T)	730 (T)	730 (T)	730 (T)
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.469	P=0.752	P=0.272	P=0.743
POLY 1.5	P=0.487	P=0.758	P=0.287	P=0.752
POLY 6	P=0.448	P=0.740	P=0.248	P=0.729
COCH-ARM / FISHERS	P=0.505	P=0.753N	P=0.309	P=0.753N
MAX-ISO-POLY-3	P=0.425	P=0.488	P=0.142	P=0.477
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Skin				
Trichoepithelioma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: C-Cell Adenoma				
TUMOR RATES				
OVERALL (a)	8/50 (16%)	6/49 (12%)	4/49 (8%)	2/50 (4%)
POLY-3 RATE (b)	8/44.31	6/41.51	4/39.39	2/41.36
POLY-3 PERCENT (g)	18.1%	14.5%	10.2%	4.8%
TERMINAL (d)	7/35 (20%)	5/25 (20%)	4/24 (17%)	1/25 (4%)
FIRST INCIDENCE	674	684	730 (T)	506
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.036N*	P=0.437N	P=0.237N	P=0.056N
POLY 1.5	P=0.033N*	P=0.414N	P=0.214N	P=0.050N*
POLY 6	P=0.041N*	P=0.482N	P=0.278N	P=0.067N
COCH-ARM / FISHERS	P=0.031N*	P=0.403N	P=0.188N	P=0.046N*
MAX-ISO-POLY-3	P=0.054N	P=0.330N	P=0.164N	P=0.031N*
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: C-Cell Carcinoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	2/49 (4%)	1/49 (2%)	1/50 (2%)
POLY-3 RATE (b)	1/44.10	2/41.33	1/39.39	1/41.00
POLY-3 PERCENT (g)	2.3%	4.8%	2.5%	2.4%
TERMINAL (d)	1/35 (3%)	2/25 (8%)	1/24 (4%)	0/25 (0%)
FIRST INCIDENCE	730 (T)	730 (T)	730 (T)	646
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.475N	P=0.477	P=0.735	P=0.744
POLY 1.5	P=0.464N	P=0.488	P=0.744	P=0.753
POLY 6	P=0.492N	P=0.458	P=0.720	P=0.732
COCH-ARM / FISHERS	P=0.451N	P=0.492	P=0.747	P=0.753N
MAX-ISO-POLY-3	P=0.610N	P=0.267	P=0.468	P=0.479
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: C-Cell Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	9/50 (18%)	8/49 (16%)	5/49 (10%)	3/50 (6%)
POLY-3 RATE (b)	9/44.31	8/41.51	5/39.39	3/41.67
POLY-3 PERCENT (g)	20.3%	19.3%	12.7%	7.2%
TERMINAL (d)	8/35 (23%)	7/25 (28%)	5/24 (21%)	1/25 (4%)
FIRST INCIDENCE	674	684	730 (T)	506
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.035N*	P=0.560N	P=0.262N	P=0.072N
POLY 1.5	P=0.032N*	P=0.532N	P=0.235N	P=0.065N
POLY 6	P=0.039N*	P=0.605	P=0.309N	P=0.086N
COCH-ARM / FISHERS	P=0.030N*	P=0.518N	P=0.205N	P=0.061N
MAX-ISO-POLY-3	P=0.059N	P=0.452N	P=0.188N	P=0.042N*
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: Follicular Cell Carcinoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	0/49 (0%)	0/49 (0%)	0/50 (0%)
POLY-3 RATE (b)	1/44.76	0/41.33	0/39.39	0/40.70
POLY-3 PERCENT (g)	2.2%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/25 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	511	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
 Cobalt
 CAS Number: 7440-48-4

Date Report Requested: 01/18/2012
 Time Report Requested: 14:48:12
 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Thyroid Gland: Follicular Cell Carcinoma or Adenoma				
TUMOR RATES				
OVERALL (a)	1/50 (2%)	0/49 (0%)	1/49 (2%)	1/50 (2%)
POLY-3 RATE (b)	1/44.76	0/41.33	1/39.39	1/41.09
POLY-3 PERCENT (g)	2.2%	0%	2.5%	2.4%
TERMINAL (d)	0/35 (0%)	0/25 (0%)	1/24 (4%)	0/25 (0%)
FIRST INCIDENCE	511	---	730 (T)	618
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 01/18/2012

Time Report Requested: 14:48:12

First Dose M/F: 05/08/06 / 05/08/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Uterus				
Polyp Stromal				
TUMOR RATES	#	#	#	#
OVERALL (a)	10/50 (20%)	7/50 (14%)	6/50 (12%)	10/50 (20%)
POLY-3 RATE (b)	10/44.80	7/43.10	6/41.54	10/41.50
POLY-3 PERCENT (g)	22.3%	16.2%	14.5%	24.1%
TERMINAL (d)	7/35 (20%)	4/26 (15%)	3/24 (13%)	6/25 (24%)
FIRST INCIDENCE	646	624	541	646
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.377	P=0.326N	P=0.253N	P=0.524
POLY 1.5	P=0.403	P=0.305N	P=0.231N	P=0.564
POLY 6	P=0.345	P=0.368N	P=0.295N	P=0.467
COCH-ARM / FISHERS	P=0.436	P=0.298N	P=0.207N	P=0.598N
MAX-ISO-POLY-3	P=0.386	P=0.240N	P=0.182N	P=0.423
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Zymbal's Gland Carcinoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Zymbal's Gland Carcinoma or Adenoma				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	1/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	2.4%	0%	0%
TERMINAL (d)	0/35 (0%)	1/26 (4%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	730 (T)	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS

Cobalt

CAS Number: 7440-48-4

Date Report Requested: 01/18/2012

Time Report Requested: 14:48:12

First Dose M/F: 05/08/06 / 05/08/06

Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated				
TUMOR RATES	#	#	#	#
OVERALL (a)	16/50 (32%)	29/50 (58%)	28/50 (56%)	27/50 (54%)
POLY-3 RATE (b)	16/44.81	29/46.48	28/46.31	27/45.82
POLY-3 PERCENT (g)	35.7%	62.4%	60.5%	58.9%
TERMINAL (d)	12/35 (34%)	15/26 (58%)	12/24 (50%)	13/25 (52%)
FIRST INCIDENCE	663	590	117	473
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.118	P=0.007**	P=0.013*	P=0.019*
POLY 1.5	P=0.123	P=0.007**	P=0.013*	P=0.020*
POLY 6	P=0.111	P=0.007**	P=0.011*	P=0.017*
COCH-ARM / FISHERS	P=0.123	P=0.008**	P=0.013*	P=0.021*
MAX-ISO-POLY-3	P=0.013*	P=0.004**	P=0.008**	P=0.012*
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Mesothelioma: Benign, Malignant, NOS				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Mesothelioma: Malignant				
TUMOR RATES	#	#	#	#
OVERALL (a)	0/50 (0%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY-3 RATE (b)	0/44.10	0/42.33	0/40.11	0/40.70
POLY-3 PERCENT (g)	0%	0%	0%	0%
TERMINAL (d)	0/35 (0%)	0/26 (0%)	0/24 (0%)	0/25 (0%)
FIRST INCIDENCE	---	---	---	---
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	(n)	(n)	(n)	(n)
POLY 1.5	(n)	(n)	(n)	(n)
POLY 6	(n)	(n)	(n)	(n)
COCH-ARM / FISHERS	(n)	(n)	(n)	(n)
MAX-ISO-POLY-3	(n)	(n)	(n)	(n)
HISTCONT SAME RTE	(n)	(n)	(n)	(n)
HISTCONT ALL RTES	(n)	(n)	(n)	(n)
CURR VS HC SAME RTE	(n)			
CURR VS HC ALL RTES	(n)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Benign Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	44/50 (88%)	44/50 (88%)	43/50 (86%)	43/50 (86%)
POLY-3 RATE (b)	44/49.03	44/48.12	43/46.51	43/46.45
POLY-3 PERCENT (g)	89.7%	91.4%	92.5%	92.6%
TERMINAL (d)	30/35 (86%)	24/26 (92%)	24/24 (100%)	24/25 (96%)
FIRST INCIDENCE	316	516	291	506
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.373	P=0.525	P=0.454	P=0.447
POLY 1.5	P=0.528	P=0.593	P=0.584	P=0.595
POLY 6	P=0.217	P=0.425	P=0.254	P=0.296
COCH-ARM / FISHERS	P=0.401N	P=0.620N	P=0.500N	P=0.500N
MAX-ISO-POLY-3	P=0.480	P=0.383	P=0.313	P=0.308
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
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**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	25/50 (50%)	42/50 (84%)	42/50 (84%)	49/50 (98%)
POLY-3 RATE (b)	25/47.66	42/48.52	42/47.20	49/49.66
POLY-3 PERCENT (g)	52.5%	86.6%	89%	98.7%
TERMINAL (d)	16/35 (46%)	23/26 (89%)	22/24 (92%)	25/25 (100%)
FIRST INCIDENCE	234	422	117	471
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**
MAX-ISO-POLY-3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTEs	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTEs	(e)			

Experiment Number: 60311 - 05
 Test Type: CHRONIC
 Route: RESPIRATORY EXPOSURE WHOLE BODY
 Species/Strain: RATS/F344/N Tac

P08: STATISTICAL ANALYSIS OF PRIMARY TUMORS
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 First Dose M/F: 05/08/06 / 05/08/06
 Lab: BNW

**STATISTICAL ANALYSIS OF PRIMARY TUMORS IN RATS(F344/N Tac)
 TERMINAL SACRIFICE AT 105 WEEKS**

DOSE	Females			
	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
All Organs				
Malignant and Benign Tumors				
TUMOR RATES	#	#	#	#
OVERALL (a)	48/50 (96%)	50/50 (100%)	50/50 (100%)	50/50 (100%)
POLY-3 RATE (b)	48/50.00	50/50.00	50/50.00	50/50.00
POLY-3 PERCENT (g)	96%	100%	100%	100%
TERMINAL (d)	33/35 (94%)	26/26 (100%)	24/24 (100%)	25/25 (100%)
FIRST INCIDENCE	234	422	117	471
HC TUMORS SAME ROUTE	0/0 (0%)			
HC TUMORS ALL ROUTES	0/0 (0%)			
STATISTICAL TESTS				
POLY 3	P=0.185	P=0.237	P=0.237	P=0.237
POLY 1.5	P=0.185	P=0.237	P=0.237	P=0.237
POLY 6	P=0.185	P=0.237	P=0.237	P=0.237
COCH-ARM / FISHERS	P=0.187	P=0.247	P=0.247	P=0.247
MAX-ISO-POLY-3	P=0.036*	P=0.076	P=0.076	P=0.076
HISTCONT SAME RTE	(e)	(e)	(e)	(e)
HISTCONT ALL RTES	(e)	(e)	(e)	(e)
CURR VS HC SAME RTE	(e)			
CURR VS HC ALL RTES	(e)			

Experiment Number: 60311 - 05
Test Type: CHRONIC
Route: RESPIRATORY EXPOSURE WHOLE BODY
Species/Strain: RATS/F344/N Tac

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LEGEND

- (a) Number of tumor-bearing animals/number of animals examined at site.
- (b) Number of tumor-bearing animals/Poly-3 number
- (d) Observed incidence at terminal kill.
- (e) Value of statistic cannot be computed.
- (f) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to pairwise comparisons between the controls and that dosed group.
- (g) Poly-3 adjusted lifetime tumor incidence.
- (h) Historical Controls statistic is not calculated when the HC Poly-3 rate is higher than the Poly-3 rates for all dose groups.
- (n) No statistics are calculated if all dose groups have fewer than two tumors.
- (I) Interim sacrifice
- (T) Terminal sacrifice
- # Tumor rates based on numbers of animals necropsied.
- * To the right of any statistical result, indicates significance at ($P \leq 0.05$).
- ** To the right of any statistical result, indicates significance at ($P \leq 0.01$).
- N Indicates a negative trend for all tests
The Cochran-Armitage and Fishers exact tests compare directly the overall incidence rates.

*** END OF REPORT ***