C Number:	S0939
Study Gender:	NA
PWG Approval Date	See web page for date of PWG Approval

Study Number: S0939
Test Type: Human Liver Microsome

PA49: Summary of Cytochrome Activity
Test Compound: Gum Guggul Extract (a)
CAS Number: GUMGUGGULEXT

Date Report Requested: 11/26/2019
Time Report Requested: 09:53:12
Lab: Research Triangle Institute

	Treatment Groups (uM)				
	0	**0.3**	**1**	**10**	**20 uM Ver**
Cytochrome P450 1A2 (acetaminophen) (nmol/min/mg protein)	0.537 ± 0.018 (3) *	0.543 ± 0.021 (3)	0.535 ± 0.013 (3)	0.474 ± 0.009 (3)	NR
Cytochrome P450 2A6 (7-OH Coumarin) (nmol/min/mg protein)	0.589 ± 0.058 (3)	0.560 ± 0.009 (3)	0.559 ± 0.024 (3)	0.710 ± 0.040 (3)	NR
Cytochrome P450 2C8 (6a-OH-paclitaxel) (nmol/min/mg protein)	0.101 ± 0.009 (2)	0.073 ± 0.002 (2)	0.072 ± 0.018 (3)	0.071 ± 0.013 (2)	NR
Cytochrome P450 2C9 (4-OH tolbutamide) (nmol/min/mg protein)	0.085 ± 0.001 (3) **	0.076 ± 0.003 (3) *	0.060 ± 0.001 (3) **	0.012 ± 0.001 (3) **	NR
Cytochrome P450 2C19 (HO-methenytoin) (pmol/min/mg protein)	7.079 ± 0.253 (2)	3.137 ± 0.732 (2)	6.390 ± 0.822 (3)	7.274 ± 1.385 (3)	NR
Cytochrome P450 2D6 (Dextrorphan) (nmol/min/mg protein)	0.079 ± 0.004 (3)	0.085 ± 0.001 (3)	0.083 ± 0.003 (3)	0.042 ± 0.004 (3)	NR
Cytochrome P450 2E1 (4-nitrocatechol) (nmol/min/mg protein)	1.059 ± 0.031 (3)	NR	NR	1.165 ± 0.023 (3)	NR
Cytochrome P450 3A4 (1-OH Midazolan) (nmol/min/mg protein)	0.163 ± 0.030 (3)	0.087 ± 0.006 (3)	0.092 ± 0.016 (3)	0.097 ± 0.019 (3)	NR
Cytochrome P450 3A4 (6b-OH Testosterone) (nmol/min/mg protein)	2.427 ± 0.205 (3) *	2.068 ± 0.054 (3)	2.074 ± 0.143 (2)	0.632 ± 0.057 (2)	NR
Cytochrome P450 4a (12-OH Luaric Acid) (nmol/min/mg protein)	1.323 ± 0.053 (3)	1.223 ± 0.052 (3)	1.234 ± 0.047 (3)	1.439 ± 0.036 (3)	NR
P-glycoprotein ATPase Activity (nmol/min/mg protein)	0.807 ± 0.426 (6) **	3.070 ± 0.900 (2)	8.455 ± 0.615 (2) *	39.045 ± 0.095 (2) **	44.053 ± 1.109 (6) **

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	0	**0.3**	**1**	**10**	**20 uM Ver**
NTCP-Mediated Uptake of Taurocholic Acid (pmol TCA/Oocyte/45 min)	0.396 ± 0.112 (7) **	0.306 ± 0.042 (6)	0.227 ± 0.072 (7)	0.044 ± 0.008 (5) **	NR

LEGEND

(a) Tested gum guggul extract formulation (Lot # G51177/H), total guggulsterone content (~2.45%), Z-guggulsterone (~1.14%) and E-guggulsterone (1.31%)

Data are displayed as mean ± SEM (N) unless otherwise noted.

Statistical analysis performed by Jonckheere (trend) and Shirley or Dunn (pairwise) tests.

Statistical significance for a treatment group indicates a significant pairwise test compared to the vehicle control group

Statistical significance for the control group indicates a significant trend test

Statistical analysis for the positive control group compared to the vehicle control group was performed using the Wilcoxon test.

* Statistically significant at P <= 0.05

** Statistically significant at P <= 0.01

Cytochrome P450 2E1 was not measured for the 0.3 and 1 uM dose groups. Positive controls were only run for the ATPase activity assay.

Ver = Verpamil

NR not recorded

** END OF REPORT **