M06: Spleen Immunophenotyping

Study Number: I10353   Test Compound: Benzo(a)pyrene   Date: 03 Sep 2024

DTTID: 103-005-002-000-1   CAS Number: 50-32-8   Time: 12:56:30 PM

Study Type: Immune screening   DTXSID: DTXSID2020139

Species/Strain: Mouse/B6C3F1/N

Females: SRBC

	Treatment Groups								
	0 mg/kg	2 mg/kg	5 mg/kg	9 mg/kg	19 mg/kg	38 mg/kg	75 mg/kg	150 mg/kg	50 mg/kg CPS
Spleen Cells (x10^6)	103.16 ± 5.28[8]**	90.68 ± 8.63[8]	85.58 ± 4.75[8]	80.29 ± 7.14[8]*	68.74 ± 4.78[8]**	68.21 ± 6.66[8]**	59.74 ± 4.20[8]**	49.09 ± 2.90[8]**	26.14 ± 1.66[8]**
Absolute counts									
Total Lymphocytes	99.155 ± 4.852[8]**	88.101 ± 8.070[8]*	83.807 ± 4.681[8]	78.559 ± 6.835[8]*	67.691 ± 4.611[8]**	66.955 ± 6.411[8]**	59.255 ± 4.143[8]**	48.740 ± 2.870[8]**	25.570 ± 1.495[8]**
Total T Cells	45.082 ± 2.292[8]**	41.137 ± 4.346[8]	40.176 ± 2.765[8]	39.234 ± 3.705[8]	30.812 ± 2.321[8]**	27.777 ± 2.593[8]**	26.486 ± 1.650[8]**	22.921 ± 1.565[8]**	15.583 ± 1.143[8]**
CD4$^+$ T Cells[a]	26.876 ± 1.571[8]**	24.716 ± 2.743[8]	24.131 ± 1.666[8]	23.218 ± 2.208[8]	18.176 ± 1.355[8]**	16.940 ± 1.610[8]**	16.227 ± 1.017[8]**	13.448 ± 0.918[8]**	8.123 ± 0.679[8]**
CD8$^+$ T Cells[b]	16.508 ± 0.694[8]**	14.729 ± 1.473[8]	14.399 ± 1.029[8]	14.454 ± 1.391[8]	11.369 ± 0.884[8]**	9.836 ± 0.886[8]**	9.391 ± 0.589[8]**	8.815 ± 0.619[8]**	6.408 ± 0.601[8]**
B Cells	42.581 ± 2.187[8]**	38.035 ± 3.086[8]	35.938 ± 1.857[8]*	32.090 ± 2.599[8]*	31.093 ± 2.390[8]*	34.282 ± 3.529[8]	29.084 ± 2.631[8]**	23.315 ± 1.317[8]**	6.423 ± 0.282[8]**
NK Cells	4.680 ± 0.675[8]**	3.696 ± 0.622[8]	2.994 ± 0.273[8]	2.761 ± 0.541[8]*	2.014 ± 0.221[8]**	1.883 ± 0.325[8]**	1.306 ± 0.140[8]**	0.889 ± 0.091[8]**	1.484 ± 0.845[8]**
Mono/Mac Cells[c]	1.849 ± 0.098[8]**	1.529 ± 0.123[8]	1.381 ± 0.077[8]**	1.254 ± 0.126[8]**	1.107 ± 0.075[8]**	1.012 ± 0.109[8]**	0.769 ± 0.083[8]**	0.441 ± 0.035[8]**	0.327 ± 0.078[8]**
Neutrophils	0.469 ± 0.041[8]**	0.375 ± 0.032[8]	0.304 ± 0.037[8]*	0.327 ± 0.035[8]*	0.316 ± 0.044[8]**	0.276 ± 0.033[8]**	0.223 ± 0.039[8]**	0.196 ± 0.017[8]**	0.215 ± 0.167[8]*
Eosinophils	0.149 ± 0.011[8]**	0.140 ± 0.010[8]	0.101 ± 0.005[8]*	0.123 ± 0.014[8]*	0.097 ± 0.015[8]**	0.076 ± 0.011[8]**	0.062 ± 0.013[8]**	0.037 ± 0.006[8]**	0.022 ± 0.008[8]**
Total T Cells: B Cells Ratio	1.064 ± 0.038[8]**	1.087 ± 0.075[8]	1.118 ± 0.050[8]	1.223 ± 0.059[8]	1.009 ± 0.074[8]	0.829 ± 0.049[8]	0.944 ± 0.073[8]	0.983 ± 0.040[8]	2.439 ± 0.163[8]**
CD4$^+$ T Cells: CD8$^+$ T Cells Ratio	1.622 ± 0.038[8]	1.677 ± 0.046[8]	1.678 ± 0.031[8]	1.609 ± 0.048[8]	1.603 ± 0.023[8]	1.718 ± 0.053[8]	1.732 ± 0.033[8]	1.531 ± 0.045[8]	1.281 ± 0.050[8]
Relative counts									
Percent Total Lymphocytes (%)	96.234 ± 0.860[8]**	97.326 ± 0.495[8]	97.929 ± 0.376[8]	98.016 ± 0.574[8]	98.546 ± 0.344[8]*	98.314 ± 0.432[8]	99.216 ± 0.085[8]**	99.304 ± 0.110[8]**	98.051 ± 0.738[8]**
Percent Total T Cells (%)	45.529 ± 0.995[8]	46.479 ± 1.823[8]	47.766 ± 1.145[8]	49.873 ± 1.251[8]	45.566 ± 1.597[8]	41.805 ± 1.379[8]	45.091 ± 1.793[8]	46.903 ± 0.952[8]	61.683 ± 3.973[8]*
Percent CD4$^+$ T Cells (%)	59.466 ± 0.540[8]	59.955 ± 0.545[8]	60.043 ± 0.436[8]	59.129 ± 0.713[8]	59.011 ± 0.354[8]	60.876 ± 0.678[8]	61.279 ± 0.395[8]	58.693 ± 0.647[8]	51.821 ± 1.415[8]**
Percent CD8$^+$ T Cells (%)	36.744 ± 0.506[8]	35.876 ± 0.680[8]	35.829 ± 0.408[8]	36.886 ± 0.648[8]	36.856 ± 0.337[8]	35.571 ± 0.682[8]	35.449 ± 0.451[8]	38.463 ± 0.654[8]	40.768 ± 1.526[8]
Percent B Cells (%)	42.960 ± 0.876[8]**	43.525 ± 1.638[8]	43.010 ± 0.892[8]	41.138 ± 1.097[8]	45.943 ± 1.576[8]	50.998 ± 1.437[8]**	48.750 ± 1.856[8]**	47.955 ± 0.913[8]**	25.376 ± 0.890[8]**
Percent NK Cells (%)	4.674 ± 0.613[8]**	4.086 ± 0.376[8]	3.596 ± 0.305[8]	3.389 ± 0.499[8]	2.944 ± 0.196[8]*	2.735 ± 0.308[8]*	2.170 ± 0.104[8]**	1.819 ± 0.146[8]**	5.184 ± 2.664[8]
Percent Mono/Mac Cells (%)	1.794 ± 0.032[8]**	1.701 ± 0.061[8]	1.619 ± 0.052[8]**	1.549 ± 0.052[8]**	1.618 ± 0.061[8]**	1.481 ± 0.068[8]**	1.276 ± 0.072[8]**	0.893 ± 0.030[8]**	1.198 ± 0.215[8]
Percent Neutrophils (%)	0.458 ± 0.039[8]	0.420 ± 0.028[8]	0.371 ± 0.065[8]	0.412 ± 0.040[8]	0.460 ± 0.051[8]	0.410 ± 0.037[8]	0.364 ± 0.042[8]	0.399 ± 0.022[8]	0.682 ± 0.496[8]*
Percent Eosinophils (%)	0.147 ± 0.012[8]**	0.157 ± 0.008[8]	0.120 ± 0.007[8]	0.153 ± 0.012[8]	0.137 ± 0.017[8]	0.110 ± 0.009[8]	0.103 ± 0.017[8]*	0.074 ± 0.008[8]**	0.078 ± 0.022[8]*

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LEGEND

Data are displayed as mean $\pm$ SEM (N) unless otherwise noted.

All units are x10^6/spleen unless otherwise noted.

Statistical analysis performed by Jonckheere (trend) and Shirley or Dunn (pairwise) tests. The positive control group (50 mg/kg CPS) was excluded from trend test.

Statistical analysis for the positive control group (50 mg/kg CPS) compared to the vehicle control group was performed using the Wilcoxon rank sum test.

Statistical significance for the control group indicates a significant trend test.

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

* Statistically significant at P $\leq$ 0.05

** Statistically significant at P $\leq$ 0.01

[a]CD4$^+$ T Cells = Helper/DTH - T Cell

[b]CD8$^+$ T Cells = Cytotoxic T Cell

[c]Mono/Mac Cells = Monocytes/Macrophage

SRBC = Sheep Red Blood Cells

SD = Study Day

SEM = Standard Error of the Mean

CPS = Cyclophosphamide

Females from the vehicle control and treatment groups were removed on SD 28.

<div align="center">** END OF REPORT **</div>