

M06: Spleen Immunophenotyping

Study Number: I07062

DTTID: 108-006-005-000-0

Study Type: Immune screening

Species/Strain: Rat/Sprague Dawley

Test Compound: 1020 Long Multiwalled Carbon Nanotubes

CAS Number: L-MWNT-1020

DTXSID: DTXSID601356181

Date: 29 Aug 2024

Time: 3:01:25 PM

Females: Immunophenotyping

	Treatment Groups				
	0 mg/m ³	0.06 mg/m ³	0.2 mg/m ³	0.6 mg/m ³	15 mg/kg CPS
Spleen Cells (x10 ⁶)	345.95 ± 16.00[12]	456.95 ± 28.47[12]**	434.15 ± 21.57[12]*	409.80 ± 19.40[12]	165.18 ± 19.49[10]**
Absolute counts					
Total Lymphocytes	340.954 ± 15.738[12]	451.685 ± 28.159[12]**	429.145 ± 21.429[12]*	404.909 ± 19.201[12]	162.807 ± 19.745[10]**
Total T Cells	102.024 ± 4.983[12]	154.826 ± 11.171[12]**	143.832 ± 8.819[12]**	126.047 ± 7.065[12]	80.965 ± 9.626[10]
CD4 ⁺ T Cells ^a	57.520 ± 4.024[12]	88.327 ± 8.269[12]**	83.264 ± 5.535[12]**	68.792 ± 4.107[12]	42.012 ± 6.242[10]
CD8 ⁺ T Cells ^b	39.540 ± 2.564[12]	60.507 ± 4.075[12]**	54.213 ± 4.162[12]*	51.805 ± 3.128[12]	36.691 ± 3.383[10]
B Cells	172.003 ± 9.675[12]	213.994 ± 14.403[12]	201.592 ± 11.929[12]	194.959 ± 10.078[12]	46.339 ± 6.996[10]**
NK Cells	8.754 ± 0.606[12]**	11.014 ± 0.762[12]*	10.873 ± 0.371[12]*	12.391 ± 1.061[12]**	7.973 ± 1.259[10]
Mono/Mac Cells ^c	6.560 ± 0.651[12]	6.962 ± 0.613[12]	6.738 ± 0.269[12]	6.655 ± 0.568[12]	2.137 ± 0.370[10]**
Neutrophils	5.749 ± 0.379[12]	5.820 ± 0.325[12]	6.982 ± 0.467[12]	5.855 ± 0.362[12]	4.072 ± 0.485[10]*
Eosinophils	0.521 ± 0.046[12]	0.488 ± 0.055[12]	0.558 ± 0.093[12]	0.416 ± 0.065[12]	0.252 ± 0.032[10]**
Total T Cells: B Cells Ratio	0.604 ± 0.028[12]	0.727 ± 0.025[12]**	0.716 ± 0.025[12]*	0.650 ± 0.027[12]	1.853 ± 0.106[10]**
CD4 ⁺ T Cells: CD8 ⁺ T Cells Ratio	1.513 ± 0.143[12]	1.485 ± 0.138[12]	1.583 ± 0.102[12]	1.339 ± 0.059[12]	1.117 ± 0.095[10]*
Relative counts					
Percent Total Lymphocytes (%)	98.560 ± 0.126[12]	98.854 ± 0.097[12]	98.831 ± 0.080[12]	98.801 ± 0.103[12]	98.155 ± 0.834[10]
Percent Total T Cells (%)	30.126 ± 1.059[12]	34.158 ± 0.818[12]*	33.343 ± 0.788[12]	31.096 ± 0.866[12]	50.227 ± 1.259[10]**
Percent CD4 ⁺ T Cells (%)	56.102 ± 2.062[12]	56.387 ± 1.748[12]	57.882 ± 1.400[12]	54.485 ± 0.943[12]	50.467 ± 2.008[10]
Percent CD8 ⁺ T Cells (%)	38.963 ± 1.842[12]	39.618 ± 1.623[12]	37.588 ± 1.461[12]	41.169 ± 0.990[12]	46.730 ± 2.035[10]*
Percent B Cells (%)	50.256 ± 0.936[12]	47.240 ± 0.657[12]	46.847 ± 0.920[12]*	48.114 ± 0.768[12]	27.657 ± 1.191[10]**
Percent NK Cells (%)	2.558 ± 0.113[12]	2.479 ± 0.151[12]	2.591 ± 0.133[12]	3.038 ± 0.200[12]	4.806 ± 0.439[10]**
Percent Mono/Mac Cells (%)	1.917 ± 0.185[12]	1.513 ± 0.087[12]	1.589 ± 0.091[12]	1.626 ± 0.112[12]	1.277 ± 0.148[10]**
Percent Neutrophils (%)	1.666 ± 0.086[12]	1.303 ± 0.075[12]**	1.650 ± 0.147[12]	1.429 ± 0.058[12]	2.533 ± 0.259[10]**
Percent Eosinophils (%)	0.153 ± 0.014[12]*	0.108 ± 0.011[12]	0.131 ± 0.021[12]	0.101 ± 0.016[12]*	0.155 ± 0.015[10]

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LEGEND

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

All units are $\times 10^6$ /spleen unless otherwise noted.

Statistical analysis performed by Jonckheere (trend) and Shirley or Dunn (pairwise) tests. The positive control group (15 mg/kg CPS) was excluded from trend test.

Statistical analysis for the positive control group (15 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 $P \leq 0.01$

^aCD4⁺ T Cells = Helper/DTH - T Cell

^bCD8⁺ T Cells = Cytotoxic T Cell

^cMono/Mac Cells = Monocytes/Macrophage

SD = Study Day

SEM = Standard Error of the Mean

CPS = Cyclophosphamide

Females from the vehicle control and treatment groups were removed on SD 42-43.

** END OF REPORT **