

**Table 9** Functional activity of the mononuclear phagocytic system in female B6C3F1/N mice exposed to gum guggul extract via oral gavage daily for 28 days

Parameter	Vehicle	Gum Guggul (ug/kg/day)					CPS 50 mg/kg	Trend Analytics p-value
		31.25	62.5	125	250	500		
<i>Mononuclear phagocytic system response – Study 1</i>								
Vascular half-life (min)	14.05 ± 0.81	23.64 ± 8.88	12.77 ± 0.68	11.46 ± 1.16	10.54 ± 1.28	10.55 ± 3.21	457.2 ± 306.0**	<b>0.005</b>
Body weight (g)	23.82 ± 0.61	23.54 ± 1.00	23.28 ± 0.95	24.00 ± 1.15	24.13 ± 0.61	23.72 ± 0.67	25.25 ± 0.96	0.793
Liver weight (mg)	759 ± 20	750 ± 35	735 ± 24	755 ± 40	789 ± 22	806 ± 40	1055 ± 42**	0.279
% uptake	28.21 ± 1.82	25.37 ± 2.50	23.65 ± 2.19	29.17 ± 3.22	29.80 ± 3.56	28.01 ± 2.81	4.53 ± 0.46**	0.626
cpm/mg	170.7 ± 10.31	154.1 ± 15.19	143.7 ± 11.82	180.0 ± 19.26	172.8 ± 13.99	159.2 ± 14.91	20.93 ± 2.10**	0.914
Spleen weight (mg)	66 ± 2	63 ± 4	62 ± 2	62 ± 3	69 ± 3	65 ± 5	77 ± 4*	0.285
% uptake	14.54 ± 0.92	11.85 ± 0.51	11.55 ± 1.72	13.97 ± 2.31	13.17 ± 1.16	11.70 ± 1.36	2.34 ± 0.26**	0.705
cpm/mg	1032 ± 82.88	868.4 ± 44.59	826.2 ± 118.2	1045 ± 165.8	916.3 ± 104.5	839.9 ± 109.7	147.3 ± 15.00**	0.563
Lung weight (mg)	185 ± 12	208 ± 15	177 ± 6	180 ± 11	192 ± 12	182 ± 14	214 ± 11	0.779
% uptake	1.38 ± 0.23	1.99 ± 0.45	0.96 ± 0.15	0.98 ± 0.24	1.32 ± 0.25	1.10 ± 0.12	5.87 ± 0.60**	0.220
cpm/mg	34.07 ± 4.67	44.85 ± 10.36	24.29 ± 4.09	24.09 ± 4.47	31.48 ± 5.28	28.89 ± 3.78	132.6 ± 11.12**	0.470
Thymus weight (mg)	62 ± 2	50 ± 3	54 ± 3	56 ± 4	52 ± 4	60 ± 4	44 ± 3**	0.793
% uptake	0.04 ± 0.01	0.05 ± 0.02	0.03 ± 0.01	0.04 ± 0.0	0.03 ± 0.00	0.04 ± 0.01	0.31 ± 0.08**	0.516
cpm/mg	3.24 ± 0.45	4.45 ± 1.18	2.81 ± 0.48	3.07 ± 0.42	2.84 ± 0.29	3.10 ± 0.34	32.19 ± 6.50**	0.885
Kidney weight (mg)	282 ± 7	283 ± 13	276 ± 9	281 ± 11	272 ± 7	284 ± 11	330 ± 9**	0.857
% uptake	1.92 ± 0.37	1.98 ± 0.20	1.82 ± 0.19	2.16 ± 0.12	1.61 ± 0.10	2.17 ± 0.47	1.65 ± 0.19	0.986
cpm/mg	31.67 ± 6.53	31.86 ± 3.36	29.67 ± 3.32	35.57 ± 2.12	27.85 ± 2.37	35.07 ± 7.31	24.49 ± 3.07	0.871
<i>Mononuclear phagocytic system response – Study 2</i>								
Vascular half-life (min)	11.28 ± 0.86	<b>20.21 ± 3.24*</b>	14.50 ± 1.44	12.00 ± 0.78	<b>27.58 ± 9.28*</b>	14.39 ± 1.81	77.73 ± 17.17**	0.305
Body weight (g)	23.74 ± 0.82	22.83 ± 0.55	22.60 ± 0.80	23.54 ± 0.80	23.58 ± 0.77	23.25 ± 0.59	23.60 ± 0.67	0.985
Liver weight (mg)	760 ± 23	688 ± 31	709 ± 15	784 ± 30	780 ± 32	807 ± 30	1011 ± 22**	<b>0.014</b>
% uptake	28.08 ± 3.30	27.47 ± 2.51	25.68 ± 2.18	27.03 ± 1.70	28.04 ± 2.56	24.62 ± 1.98	8.13 ± 3.25**	0.564
cpm/mg	164.8 ± 15.70	173.4 ± 10.45	156.4 ± 12.90	156.0 ± 9.96	164.2 ± 17.44	137.0 ± 11.83	39.56 ± 18.47**	0.080
Spleen weight (mg)	61 ± 3	63 ± 5	62 ± 3	71 ± 5	72 ± 4	65 ± 3	77 ± 4*	0.113
% uptake	12.29 ± 1.64	13.44 ± 1.24	13.81 ± 1.32	12.46 ± 1.13	12.75 ± 1.11	11.99 ± 0.61	8.54 ± 1.57	0.342
cpm/mg	914.8 ± 109.8	943.4 ± 68.14	984.5 ± 106.6	802.3 ± 64.05	828.4 ± 95.75	832.5 ± 49.04	513.6 ± 95.69**	0.057
Lung weight (mg)	199 ± 12	211 ± 18	210 ± 19	207 ± 16	211 ± 13	198 ± 16	164 ± 6*	0.823
% uptake	1.30 ± 0.34	1.23 ± 0.12	<b>2.28 ± 0.41*</b>	1.57 ± 0.20	2.04 ± 0.52	1.72 ± 0.28	5.20 ± 0.65**	0.057
cpm/mg	31.19 ± 9.31	26.25 ± 2.64	50.85 ± 12.42	33.74 ± 2.26	45.93 ± 13.18	40.16 ± 6.63	142.0 ± 17.07**	<b>0.032</b>
Thymus weight (mg)	52 ± 4	63 ± 3	53 ± 5	62 ± 4	72 ± 5	64 ± 4	44 ± 4	<b>0.018</b>
% uptake	0.04 ± 0.01	0.04 ± 0.01	0.07 ± 0.02	0.05 ± 0.01	0.10 ± 0.03	0.05 ± 0.01	0.13 ± 0.02**	0.094
cpm/mg	3.65 ± 0.91	2.90 ± 0.36	5.45 ± 0.82	3.67 ± 0.55	6.59 ± 1.67	3.37 ± 0.32	14.29 ± 2.77**	0.226
Kidney weight (mg)	282 ± 9	261 ± 11	260 ± 9	283 ± 14	275 ± 11	282 ± 6	311 ± 11	0.675
% uptake	1.64 ± 0.10	1.43 ± 0.10	1.56 ± 0.09	1.83 ± 0.22	1.78 ± 0.31	1.45 ± 0.09	1.53 ± 0.13	0.141
cpm/mg	26.49 ± 1.64	23.90 ± 1.12	26.05 ± 1.83	29.28 ± 3.33	30.10 ± 6.18	22.95 ± 1.50	22.18 ± 1.65*	0.205

Values represent the mean (±SE) from 7-8 animals/group; \*p < 0.05; \*\*p < 0.01.

GGE, Gugulipid® Lot # G51177/H, ~2.45% total guggulsterone content. CPS, cyclophosphamide.

A 60 minute half-life value was assigned to multiple animals in the MVE 50 mg/kg group where no vascular clearance was observed by the 60 minute time period