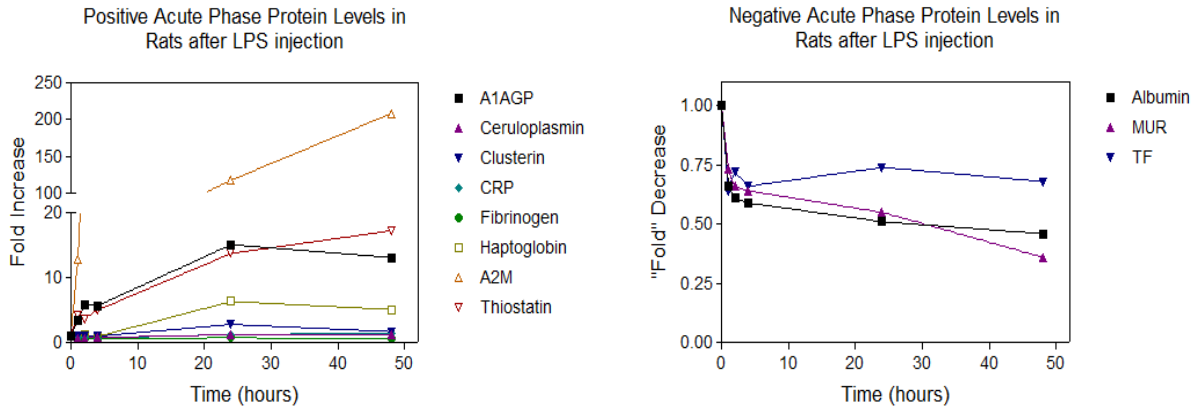
Acute Phase Response in Rats

Summary

Acute phase protein levels were measured in serum from Sprague Dawley rats after injection of lipopolysaccharide (LPS). Rats (~200g) rats were injected (i.p.) with LPS (1 mg/kg) dissolved in phosphate-buffered saline. At the times indicated, blood was drawn and serum prepared. Acute phase protein levels were evaluated using ELISA kits manufactured by Life Diagnostics, Inc. Data are illustrated as fold-change relative to baseline values.



Time (h)	Fold change of rat acute phase biomarkers after LPS injection											
	A1AGP	A2M	CP	Clusterin	CRP	Fib	Hapt	HPX	TS	Albumin	MUR	TF
0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.00	1.00	1.00
1	3.4	12.9	0.7	1.0	0.8	0.6	0.8	1.7	4.2	0.66	0.73	0.64
2	5.9	32.5	0.7	1.0	0.8	0.6	1.1	1.7	3.7	0.61	0.66	0.72
4	5.7	28.2	0.8	1.0	0.7	0.6	0.9	1.8	5.0	0.59	0.64	0.66
24	15.1	117.9	1.2	2.8	1.3	0.8	6.3	3.8	13.7	0.51	0.55	0.74
48	13.1	208.5	1.2	1.7	1.4	0.6	5.1	2.6	17.2	0.46	0.36	0.68

A1AGP: α-1-acid glycoprotein, A2M: α-2-macroglobulin, CP: ceruloplasmin, CRP: C-reactive protein, Fib: fibrinogen, Hapt: haptoglobin, HPX: hemopexin, TS: thiostatin, MUR: murinoglobulin, TF: transferrin

Baseline values (mg/ml): A1AGP (0.079), A2M (0.032), CP (1.044), Clusterin (0.012), CRP (0.541), Fib (1.522), Hapt (0.709), HPX (0.829), TS (0.136), Albumin (22.8), MUR (12.2), TF (3.92)

Comments

Alpha-1-acid glycoprotein, alpha-2-macroglobulin and thiostatin are excellent positive acute phase biomarkers in rats. Levels peak 24-48 hours after inflammatory stimulus but significant elevations are observed as early as one hour after LPS challenge. Negative acute phase biomarkers include albumin, murinoglobulin and transferrin.

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