

**Table 1.** Mean and S.E.M. of all bands of the ERK, CREB and c-fos in the hypothalamus area in the saline- and morphine-treated animals.

Supergroups	Groups	Factors		p-ERK/ERK ratio		p-CREB/CREB ratio		c-fos	
		Mean	S.E.M.	Mean	S.E.M.	Mean	S.E.M.		
Saline-treated animals	Control	0.38	0.04	0.14	0.00	0.32	0.01		
	Acute stress	0.58	0.5	0.38	0.00	0.39	0.01		
	Subchronic stress	0.68	0.03	0.45	0.03	0.51	0.04		
Morphine-treated animals	Control	0.55	0.04	0.26	0.01	0.36	0.02		
	Acute stress	1.04	0.07	0.85	0.08	0.63	0.02		
	Subchronic stress	1.09	0.01	0.98	0.00	0.69	0.03		

**Table 2.** Mean and S.E.M. of all bands of the ERK, CREB and c-fos in the hippocampus in the saline- and morphine-treated animals.

Supergroups	Groups	Factors		p-ERK/ERK ratio		p-CREB/CREB ratio		c-fos	
		Mean	S.E.M.	Mean	S.E.M.	Mean	S.E.M.		
Saline-treated animals	Control	0.47	0.02	0.55	0.02	2.29	0.02		
	Acute stress	0.65	0.2	1.1	0.05	5.7	0.37		
	Subchronic stress	0.7	0.06	1.6	0.07	9.04	0.39		
Morphine-treated animals	Control	0.58	0.15	0.73	0.02	4.34	0.14		
	Acute stress	0.86	0.5	1.97	0.13	11.32	0.08		
	Subchronic stress	1	0.5	2.05	0.14	12.12	0.44		

**Table 3.** The alterations of degree for factors in hypothalamus area compared to control group in saline-treated animals.

Supergroups	Factors		p-ERK/ERK ratio	p-CREB/CREB ratio	c-fos
	Groups				
<b>Saline-treated animals</b>	Acute stress		1.53	2.61	1.22
	Subchronic stress		1.79	3.05	1.59
<b>Morphine-treated animals</b>	Control		1.44	1.8	1.11
	Acute stress		2.71	5.79	1.93
	Subchronic stress		2.84	6.64	2.14

**Table 4.** The alterations of degree for factors in hippocampus area compared to control group in saline-treated animals.

Supergroups	Factors		p-ERK/ERK ratio	p-CREB/CREB ratio	c-fos
	Groups				
<b>Saline-treated animals</b>	Acute stress		1.38	2.12	2.48
	Subchronic stress		1.48	2.96	3.93
<b>Morphine-treated animals</b>	Control		1.22	1.33	1.88
	Acute stress		1.83	3.57	4.92
	Subchronic stress		2.11	3.71	5.27