

-

(M.Sc)

(Ph.D)

(M.D)

(Ph.D) *

(Ph.D)

(Ph.D)

(B.Sc)

-
-
-

:

.

.

/) :

. (

.

.

() :

+

.

.

+

:

.

:



[,]

)

[]

(

L

-

u



[]

()

±

[]

[]

L

)

(

Boldon

[]

/

[]

[]

[]

() -

[]

/

)

(

STL)

(Step through latency

TLC)

(Total time spent in light Chamber

)

(

/

)

(

(Kruskal-Wallis)

P< /

Mann-Whitney

1A

(Kruskal-Wallis)

(Boldon)

/

(P= / K= /)

Mann-Whitney

(P< /)

+

(P< /)

+

(P< /)

(P< /)

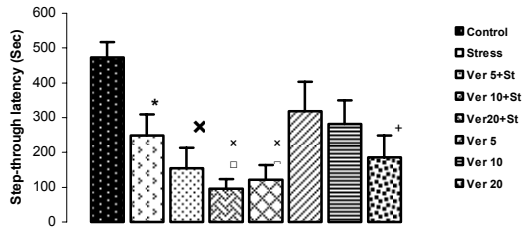
[]

1B

(Kruskal-Wallis)

(P= / K= /)

Mann-Whitney

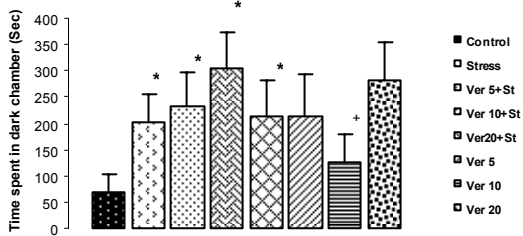


(P< /)

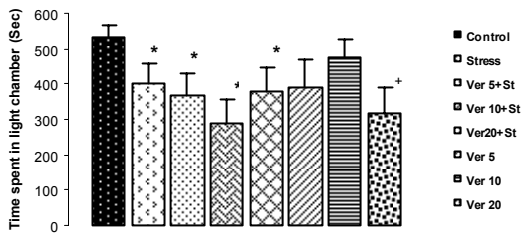
+

(P< /)

+



(P< /)



+

-)

+

(P< /)

P<0.01 * . ± : (V

P<0.05 + . P<0.05 × .

± : .

P<0.01 * .

± : . P<0.05+

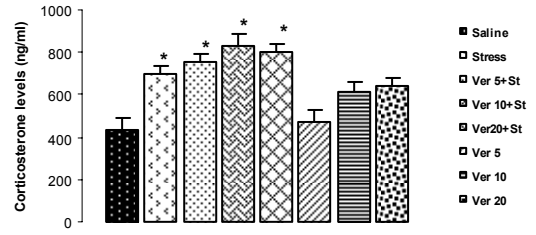
P<0.05 * .

.St= stress . P<0.05+



[]

[]



P<0.05 *

[]

)

(

[]

)

[]

(

[]

[]

L

[]

[12] Rose JD, Moore FL. A neurobehavioral model for rapid actions of corticosterone on sensorimotor integration. *Steroids*, 1999; 64(1-2):92-9.

[13] Towle AC, Sze PY. Steroid binding to synaptic plasma membrane: differential binding of glucocorticoids and gonadal steroids. *J Steroid Biochem*, 1983; 18(2):135-43.

[14] Majewska MD. Antagonist-type interaction of glucocorticoids with the GABA receptor-coupled chloride channel. *Brain Res*, 1987; 418(2):377-82.

[15] Meijer OC, de Kloet ER. Corticosterone and serotonergic neurotransmission in the hippocampus: functional implications of central corticosteroid receptor diversity. *Crit Rev Neurobiol*, 1998; 12(1-2):1-20.

[16] Pakdel R, Rashidy-Pour A. Glucocorticoid-induced impairment of long-term memory retrieval in rats: an interaction with dopamine D2 receptors. *Neurobiol Learn Mem*, 2006; 85(3):300-6.

[17] Sajadi AA, Samaei SA, Rashidy-Pour A. Intra-hippocampal microinjections of anisomycin did not block glucocorticoid-induced impairment of memory retrieval in rats: An evidence for non-genomic effects of glucocorticoids. *Behav Brain Res*, 2006; 173:158-62.

[18] Sajadi AA, Rashidy-Pour A. Intra-hippocampal microinjections of naltrexone block glucocorticoid-induced impairment of spatial memory retrieval in rats. *Neuropharmacology*, 2006; (in press).

[19] Pakdel R, Rashidy-Pour A. Microinjections of the dopamine D2 receptor antagonist sulpiride into the medial prefrontal cortex attenuate glucocorticoid-induced impairment of long-term memory retrieval in rats. *Neurobiol Learn Mem*, 2007; 87(3):385-90.

[20] Woodside BL, Borroni AM, Hammonds MD, Teyler TJ. NMDA receptors and voltage-dependent calcium channels mediate different aspects of acquisition and retention of a spatial memory task. *Neurobiol Learn Mem*, 2004; 81:105-14.

[21] Quartermain D, DeSoria VG, Kwan A. Calcium channel antagonists enhance retention of passive avoidance and maze learning. *Neurobiol Learn Mem*, 2001; 75:77-90.

[22] Quartermain D, deSoria VG. The effects of calcium channel antagonists on short- and long-term retention in mice using spontaneous alternation behavior. *Neurobiol Learn Mem*, 2001; 76(1):117-24.

[23] Chameau P, Qin Y, Spijker S, Smit G, Joels M. Glucocorticoids specifically enhance L-type calcium current amplitude and affect calcium channel subunit expression in the mouse hippocampus. *J Neurophysiol*, 2007; 97(1):5-14.

[24] Karst H, Nair S, Velzing E, Rumpff-van Essen L, Slagter E, Shinnick-Gallagher P, et al. Glucocorticoids alter calcium conductances and calcium channel subunit expression in basolateral amygdala neurons. *Eur J Neurosci*, 2002; 16(6):1083-9.

[25] Rashidy-Pour A, Sadeghi H, Taherain AA, Vafaei AA, Fathollahi Y. The effects of acute restraint stress and dexamethasone on retrieval of long-term memory in rats: an interaction with opiate system. *Behav Brain Res*, 2004; 154(1):193-8.

[26] Roozendaal B, McReynolds JR, McGaugh JL. The basolateral amygdala interacts with the medial prefrontal cortex in regulating glucocorticoid effects on working memory impairment. *J Neurosci*, 2004; 24(6):1385-92.

[27] Roozendaal B, Griffith QK, Buranday J, De Quervain DJ, McGaugh JL. The hippocampus mediates glucocorticoid-induced impairment of spatial memory retrieval: dependence on the basolateral amygdala. *Proc Natl Acad Sci U S A*, 2003; 100(3):1328-33.

[28] Bean BP. Classes of calcium channels in vertebrate cells. *Annu Rev Physiol*, 1989; 51:367-84.

[29] Miller RJ. Multiple calcium channels and neuronal function. *Science*, 1987; 235(4784):46-52.

[1] Alderson AL, Novack TA. Neurophysiological and clinical aspects of glucocorticoids and memory: a review. *J Clin Exp Neuropsychol*, 2002; 24:335-55.

[2] de Kloet ER, Oitzl MS, Joels M. Stress and cognition: are corticosteroids good or bad guys? *Trends Neurosci*, 1999; 22(10):422-6.

[3] Lupien SJ, Lepage M. Stress, memory, and the hippocampus: can't live with it, can't live without it. *Behav Brain Res*, 2001; 127(1-2):137-58.

[4] Roozendaal B. 1999 Curt P. Richter award. Glucocorticoids and the regulation of memory consolidation. *Psychoneuroendocrinology*, 2000; 25(3):213-38.

[5] Roozendaal B. Stress and memory: opposing effects of glucocorticoids on memory consolidation and memory retrieval. *Neurobiol Learn Mem*, 2002; 78(3):578-95.

[6] de Quervain DJ, Roozendaal B, McGaugh JL. Stress and glucocorticoids impair retrieval of long-term spatial memory. *Nature*, 1998; 394(6695):787-90.

[7] de Quervain DJ, Roozendaal B, Nitsch RM, McGaugh JL, Hock C. Acute cortisone administration impairs retrieval of long-term declarative memory in humans. *Nat Neurosci*, 2000; 3(4):313-4.

[8] Moser MB, Moser EI. Distributed encoding and retrieval of spatial memory in the hippocampus. *J Neurosci*, 1998; 18(18):7535-42.

[9] Steffenach HA, Sloviter RS, Moser EI, Moser MB. Impaired retention of spatial memory after transection of longitudinally oriented axons of hippocampal CA3 pyramidal cells. *Proc Natl Acad Sci U S A*, 2002; 99(5):3194-8.

[10] Hua SY, Chen YZ. Membrane receptor-mediated electrophysiological effects of glucocorticoid on mammalian neurons. *Endocrinology*, 1989; 124(2):687-91.

[11] Makara GB, Haller J. Non-genomic effects of glucocorticoids in the neural system. Evidence, mechanisms and implications. *Prog Neurobiol*, 2001; 65(4):367-90.