

Corticotropin releasing hormone receptor 1

Also known as [CRF1](#), with the latter (CRF1) now being the [IUPHAR](#)-recommended name. In humans, CRF1 is encoded by the CRHR1 gene.

The aim of a study was to determine whether the corticotropin-releasing-factor-1 (CRF-1) receptor is involved in the regulation of [anxiety](#)-related symptoms in a mouse model of mTBI. Animals with or without mTBI received intracerebroventricular injections of a CRF-1 receptor agonist (CRF; 0.01 nmol/mouse) or antagonist (antalarmin; 1 µg/mouse) for 5 days, and then the animals were subjected to anxiety tests (light-dark box and zero maze). The levels of adrenocorticotrophic hormone and corticosterone, the most important markers of HPA axis, were also measured after behavioral tests. Our results indicated that mTBI-induced anxiety-related symptoms in mice through increased levels of adrenocorticotrophic hormone and corticosterone, showing HPA axis hyperactivity. Interestingly, activation of CRF receptor by a subthreshold dose of CRF resulted in significant increases in anxiety-like behaviors and HPA axis response to stress, whereas blockade of CRF receptors by a subthreshold dose of antalarmin decreased anxiety-related symptoms and HPA axis response to stress in mTBI-induced mice. Collectively, these findings suggest that the CRF-1 receptor plays an important role in the regulation of anxiety-related behaviors following mTBI induction in mice and support the hypothesis that blockade of the CRF-1 receptor may be a promising therapeutic target for anxiety-related disorders in patients with TBI ¹⁾.

¹⁾

Kosari-Nasab M, Sadeghi T, Bashiri H, Shokouhi G, Salari AA. The blockade of corticotropin-releasing factor 1 receptor attenuates anxiety-related symptoms and hypothalamus-pituitary-adrenal axis reactivity in mice with mild traumatic brain injury. Behav Pharmacol. 2019 Apr;30(2 and 3 - Special Issue):220-228. doi: 10.1097/FBP.0000000000000450. PubMed PMID: 30883392.

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