

## Product Information

### ANTI-CORTICOTROPIN RELEASING FACTOR (CRF) Developed in Rabbit, IgG Fraction of Antiserum

Product Number **C5348**

#### Product Description

Anti-Corticotropin Releasing Factor (CRF) is developed in rabbits using a synthetic peptide K-EQLAQQAHSNR-KLMEII-NH<sub>2</sub> corresponding to the C-terminus of CRF (human, amino acids 25-41 with N-terminally added lysine), conjugated to KLH as immunogen. This sequence is identical in rat, mouse, pig, and dog CRF and is highly conserved in frog, sheep and bovine CRF. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Corticotropin Releasing Factor (CRF) recognizes CRF by radioimmunoassay (RIA). Anti-CRF reacts specifically with CRF and does not cross-react with urocortin. The product may be used for immunohistochemistry. Staining of CRF by immunohistochemistry is inhibited with CRF peptide (human, amino acids 25-41 with N-terminally added lysine).

Corticotropin Releasing Factor (CRF), a 41 amino acids neuropeptide, belongs to a family of structurally related peptides including urocortin, sauvagine and urotensin I.<sup>1,2</sup> CRF is derived from a larger 196 amino acids precursor protein (preproCRF). CRF is critical in the regulation of the pituitary -adrenal gland axis, and in endocrine, autonomic and behavioral responses to stress. CRF effects include changes in motor and cognitive behavior, appetite control and modulation of the immune system.<sup>1</sup> CRF overproduction has been implicated in affective disorders, such as anorexia and depression, and may lead to Cushing's syndrome. In Alzheimer's Disease (AD), CRF content is dramatically reduced with a reciprocal increase in expression of CRF receptors.<sup>3</sup> CRF is a potent stimulator of adrenocorticotrophic hormone (ACTH) secretion by corticotroph cells from the anterior pituitary in vitro and in vivo. The effects of CRF are mediated through CRF receptor subtypes CRFR1 and CRFR2 (splice variants CRFR2 $\alpha/\beta/\gamma$ ).<sup>4,5,6,7</sup> CRF binds with high affinity and activates CRF1 and CRF2 receptors on pituitary corticotroph cells resulting in the stimulation of adenylate cyclase activity. CRF binds with high affinity to CRF-binding protein (CRF-BP), that inactivates CRF,<sup>8</sup> while ligands that dissociate CRF from CRF-BP

exhibit cognition-enhancing properties.<sup>9</sup> CRF is widely distributed in the brain and peripheral nervous system, with the highest levels in the hypothalamic paraventricular nucleus (PVN).

#### Reagents

The product is provided as IgG fraction of antiserum in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide (see MSDS)\* as a preservative.

#### Precautions and Disclaimer

\* Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

#### Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage freeze in working aliquots.

Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

#### Product Profile

A minimum working dilution of 1:100 is determined by immunohistochemistry using formalin-fixed, paraffin embedded, microwave-treated sections of human placental tissue.

A minimum working dilution of 1:10,000 is determined by RIA (secondary antibody and polyethylene glycol method) using 15-25 pg of 2-[<sup>125</sup>I]-His<sup>32</sup> CRF, human. Sensitivity: 5 pg/tube of CRF, human.

Affinity constant: Ka = 2.5x10<sup>11</sup> L/M.

#### Peptide

#### % Cross-reactivity @ 50% binding

CRF (human, rat)	100
CRF (25-41), (human, rat)	100
CRF (6-33), (human, rat)	<0.01
CRF (sheep)	<0.01
Urocortin (rat)	<0.01
PACAP38	<0.01
ACTH (human)	<0.01
ACTH (18-39), (human)	<0.01

Sauvagine <0.01

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working dilutions by titration test.

## References

1. Vale, W., et al., *Science*, **213**, 1394 (1981).
2. Turnbull, A.V., and Rivier, C., *Proc. Soc. Exp. Biol. Med.*, **215**, 1 (1997).

3. DeSouza, E.B., et al., *Nature*, **319**, 591 (1986).
4. Chen, R. et al., *Proc. Natl. Acad. Sci. USA*, **90**, 8967 (1993).
5. Lovernberg, T.W., et al., *Proc. Natl. Acad. Sci. USA*, **92**, 836 (1995).
6. Perrin, M., et al., *Proc. Natl. Acad. Sci. USA*, **92**, 2969 (1995).
7. Kostich, W.A. et al., *Mol. Endocrinol.*, **12**, 1077 (1998).
8. Behan, D.P. et al., *J. Endocrinol.*, **122**, 23 (1989).
9. Behan, D.P. et al., *Nature*, **378**, 284 (1995).

lpg 3/99

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.