

Product Data Sheet

Product Name: CREBtide

Cat. No.: GC31525

Chemical Properties

Cas. No. 149155-45-3

SMILES Lys-Arg-Arg-Glu-Ile-Leu-Ser-Arg-Arg-Pro-Ser-Tyr-Arg

Formula $C_{73}H_{129}N_{29}O_{19}$ M.Wt 1716.99

Solubility H_2O : 100 mg/mL (58.24 mM; Need ultrasonic) Storage Store at $-20^{\circ}C$

General tips For obtaining a higher solubility , please warm the tube at $37^{\circ}C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

KRREILSRRPSYR

Background

CREBtide, a synthetic 13 amino acid peptide, has been reported as a PKA substrate.

delta-CREB is a spliced variant of cAMP response element binding protein (CREB). CREBtide (KRREILSRRPSYR), a synthetic peptide based on the phosphorylation sequence in delta-CREB. delta-CREB and CREBtide are tested as substrates of cAMP-dependent protein kinase (cAK). The apparent K_m of CREBtide phosphorylation by cAK is $3.9 \mu M$, which is 10-fold lower than that of

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Kemptide ($K_m=39\ \mu\text{M}$), the synthetic peptide substrate most often employed for cAK measurement. The V_{max} values are $12.4\ \mu\text{mol}/(\text{min}\cdot\text{mg})$ for CREBtide and $9.8\ \mu\text{mol}/(\text{min}\cdot\text{mg})$ for Kemptide. The apparent K_m of CREBtide phosphorylation by cGMP-dependent protein kinase (cGK) is $2.9\ \mu\text{M}$ and the V_{max} value is $3.2\ \mu\text{mol}/(\text{min}\cdot\text{mg})$. Both delta-CREB and CREBtide are phosphorylated at a much slower rate by cGK as compared with cAK, implying that the high cAK/cGK specificity exhibits by delta-CREB is retained by the peptide[2].

[1]. Wu J, et al. A microPLC-based approach for determining kinase-substrate specificity. *Assay Drug Dev Technol.* 2007 Aug;5(4):559-66. [2]. Colbran JL, et al. cAMP-dependent protein kinase, but not the cGMP-dependent enzyme, rapidly phosphorylates delta-CREB, and a synthetic delta-CREB peptide. *Biochem Cell Biol.* 1992 Oct-Nov;70(10-11):1277-82.

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