

Synthetic Casein Kinase 1 Substrate (RRKDLHDDEEDEAMSITA) Peptide

Catalog No. CSI12117 **Quantity:** 1.0 mg

Description: The synthetic peptide RRKDLHDDEEDEAMSITA can be used as a substrate for CK1 (casein kinase 1) in in vitro kinase assays. It is phosphorylated by CK1 with a K_m of 172 μ M.

In mammals and vertebrates, there are seven CK1 genes coding for α , β , γ_1 , γ_2 , γ_3 , δ , and ϵ isoforms, and some of these genes generate several proteins through alternative splicing. The CK1 isoforms may have different functions; for instance, CK1 ϵ is involved in regulating circadian rhythm through phosphorylation of period (*per*) proteins, and it has also been linked to the activity of group I metabotropic glutamate receptors. CK1 δ may be involved in neurodegenerative diseases. CK1 α apparently participates in the phosphorylation of G protein regulated receptors and nuclear factor for activated T cells 4 (NF-AT4) phosphorylation. However, *in vitro* studies with model peptides using different isoforms of CK1 have not shown significant differences in the preferred target sequences. Differences in functions of isoforms most probably involve differential expression and cellular localization and specific docking sites that confer substrate selectivity. CK1 ϵ and CK1 δ have an interesting regulatory mechanism where autophosphorylation of their carboxyl-terminal extensions inhibits their catalytic activity. Dephosphorylation of these carboxyl residues by calcineurin may be a mechanism for regulating the activity of these isoforms.

Molecular Weight: 2131 g/mol

Formulation: Lyophilized. Reconstitution in ddH₂O.

Purity: 85 - 90% by HPLC

Amino Acid Sequence: RRKDLHDDEE DEAMSITA

Storage & Stability: Quality guaranteed for 12 months
Store at -80°C
Avoid freeze / thaw cycles

NOT FOR HUMAN USE. FOR RESEARCH ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.