Recombinant KCC2A protein (His tag)

Catalog Number	541569
Synonyms	CaM kinase II subunit alpha; CaMK-II subunit alpha
Species	Human
Expression System	E. coli
Accession	Q9UQM7
Molecular Weight	Predictes a molecular mass of 35.69 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 37 kDa band.

Product Information

Sequence Region	1-299
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>85%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 1-299 aa (Q9UQM7) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Calcium/calmodulin-dependent protein kinase type II subunit alpha (CaMK-II subunit alpha) fragment (amino acids 1-299) is a high-purity protein encompassing the complete protein kinase domain. This fragment serves as an essential tool for investigating calcium/calmodulin-dependent signaling, synaptic plasticity, and kinase activity in neuronal and cellular research applications. Calcium/calmodulin-dependent protein kinase type II subunit alpha (CaMK-II subunit alpha) is a crucial regulatory enzyme in excitatory synapses that functions autonomously after calcium/calmodulin binding and autophosphorylation. It plays fundamental roles in synaptic plasticity, neurotransmitter release, long-term potentiation, dendritic spine development, and neuronal migration. The protein regulates NMDAR-dependent potentiation of AMPAR receptors, modulates transcription factors including FOXO3 and ETS1, participates in JAK-STAT signaling pathway activation in response to interferon stimulation, and acts as a negative regulator of 2-arachidonoylglycerol-mediated synaptic signaling. Located primarily in synapses, postsynaptic densities, dendritic spines, and dendrites, this kinase is concentrated in postsynaptic lipid rafts, positioning it as a key mediator of calcium-dependent signaling in neuronal function and development.