重组人WNK3蛋白

Recombinant WNK3 protein (His tag)

目录号 Catalog Number	548169
同用名 Synonyms	Protein kinase lysine-deficient 3; Protein kinase with no lysine 3
种属 Species	Human
表达系统 Expression System	E. coli
蛋白编号 Accession	Q9BYP7
分子量 Molecular Weight	Predictes a molecular mass of 42.35 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 46 kDa band.

产品信息

氨基酸序列 Amino Acid Sequence	MKAVATSPSG RFLKFDIELG RGAFKTVYKG LDTETWVEVA WCELQDRKLT KAEQQRFKEE AEMLKGLQHP NIVRFYDSWE SILKGKKCIV LVTELMTSGT LKTYLKRFKV MKPKVLRSWC RQILKGLQFL HTRTPPIIHR DLKCDNIFIT GPTGSVKIGD LGLATLMRTS FAKSVIGTPE FMAPEMYEEH YDESVDVYAF GMCMLEMATS EYPYSECQNA AQIYRKVTSG IKPASFNKVT DPEVKEIIEG CIRQNKSERL SIRDLLNHAF FAEDTGLRVE LAEEDDCSNS SLALRLWVED PKKLKGKHKD NEAIEFSFNL ETDTPEEVAY EMVKSGFFHE SDSKAVAKSI RDRVTPIKKT RLEHHHHHH
性状 Form	冻干粉末 Lyophilized powder
组分 Formulation	Lyophilized from sterile PBS, pH 7.4
纯度 Purity	>90%, by SDS-PAGE with Coomassie Brilliant Blue staining.
内毒素 Endotoxin	Not tested.
活性 Activity	Not tested.
稳定性 Stability	Samples are stable for up to twelve months from date of receipt at -70℃
蛋白构建 Protein Construction	DNA encoding 135-495 aa (Q9BYP7) were fused with C-terminal 6His tag.

保存与运输

复溶 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.
储存 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.
运输 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.

功能描述

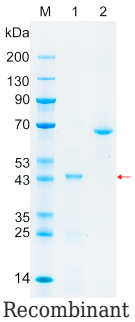
研究背景 Background

Recombinant Human Serine/threonine-protein kinase WNK3 (EC 2.7.11.1) Fragment (aa 135-495) is a high-purity protein encompassing the complete protein kinase domain (aa 147-405). This fragment serves as an essential tool for investigating kinase activity, regulatory mechanisms in electrolyte homeostasis, and cellular responses to osmotic stress, enabling focused functional and structural studies.

Serine/threonine-protein kinase WNK3 is a key component of the WNK3-SPAK/OSR1 kinase cascade, crucial for regulating electrolyte balance and cellular volume under hyperosmotic stress. It functions as a molecular crowding sensor by undergoing liquid-liquid phase separation to form membraneless compartments, concentrating and activating downstream kinases OXSR1/OSR1 and STK39/SPAK. These kinases modulate ion cotransporters (e.g., SLC12A family members), promoting ion influx via Na-K-Cl cotransporters and inhibiting efflux via K-Cl cotransporters. WNK3 also acts as a scaffold, influencing membrane localization of transporters and channels like KCNJ1 and SLC26A9, and enhances Ca^{2+} influx through TRPV5/TRPV6. Predominantly cytoplasmic, it localizes to stress-induced membraneless compartments. This fragment retains the kinase domain, enabling targeted research into phosphorylation-dependent signaling and osmotic stress responses.

验证数据

SDS-PAGE



Recombinant WNK3 protein (His tag) SDS-PAGE
M: Marker; Lane 1: WNK3; Lane 2: BSA