



LD Biopharma, Inc.
7384 Trade Street, Suite B
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Tel: 858-876-8266
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CT89 N-terminal-11R Protein
Catalog Number: hRP-2020
Manufacturer: LD Biopharma, Inc.

Introduction

Human C-Jun-amino-terminal kinase-interacting protein 4 (SPAG9, also named as CT89) encodes 1321aa protein. The JNK-interacting protein (JIP) group of scaffold proteins selectively mediates JNK signaling by aggregating specific components of the MAPK cascade to form a functional JNK signaling module. Isoform 5 may play a role in spermatozoa-egg-interaction. Normally, this gene expression is restricted in human testis tissue, but it also expressed in a wide variety of cancer tissues. As such, CT89 is a good candidate protein for anti-tumor vaccine development.

N-terminal domain of human CT89 cDNA (2 - 638aa, derived from BC146755) was constructed with codon optimization gene synthesis and expressed with a human Alpha Fetal protein at N-terminal and 11 arginine (11R tag) at C-terminal. This protein was expressed in *E. coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: CT89 (SPAG9; HSS; KIAA0516; MAPK8IP4; SYD1)
Accession Number: NP_001124000
Species: Human
Size: 50 µg / Vial
Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Ren B, et al., *Cancer testis antigen SPAG9 is a promising marker for the diagnosis and treatment of lung cancer*. *Oncol. Rep.* 35 (5), 2599-2605 (2016)



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Wang X, et al., *MicroRNA-200a-3p suppresses tumor proliferation and induces apoptosis by targeting SPAG9 in renal cell carcinoma*. *Biochem. Biophys. Res. Commun.* 470 (3), 620-626 (2016)

Zhang, L., et al., *SPAG9 promotes endometrial carcinoma cell invasion through regulation of genes related to the epithelial-mesenchymal transition*. *Eur. J. Gynaecol. Oncol.* 37 (3), 312-319 (2016)

Salmaninejad A, et al. *Cancer/Testis Antigens: Expression, regulation, Tumor Invasion, and Use in Immunotherapy of Cancers*. *Immunol Invest.* Oct; 45(7): 619-640. (2016).

Nicole Brooks, et al. *Comparative Immunogenicity of a Cytotoxic T cell Epitope Delivered by Penetratin and TAT Cell Penetrating Peptides*. *Molecules.* 20, 14033-14050. (2015)

Madiha Derouazi, et al. *Novel cell penetration peptide based vaccine induces robust CD4+ and CD8+ T cell mediated antitumor immunity*. *Cancer Res;* 75(15) August 1, 3020-3031 (2015)

Applications

1. May be used for in vitro CT89 mediated anti-tumor immunotherapy for T cell activation study with this fusion protein for intracellular delivery in MHC-II pathway.
2. As immunogen for specific antibody production.

Quality Control

Purity: > 80% by SDS-PAGE.

Recombinant Protein Sequence

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ
SSGCLLENQLPAFLLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT
SCEAYEEDRETFMKNFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT
KELRESSGGSHHHHHHGS~~ENLYFQ~~/GELEDGVVYQEEPPGGSGAVMSERVSGLAGSIYREFERLI
GRYDEEVVKELMPLVVAVLENLDSVFAQDQEHQVELELLRDDNEQLITQYEREKALRKHAEKFK
IEFEDSQEQEKKDLQTRVESLESQTRQLELKAKNYADQISRLEEREAE~~LKKEYNALHQRHTEMI~~
HNYMEHLERTKLHQLSGSDQLESTAHSRIRKERPISLGI~~FPLPAGDGLLTPDAQKGGETPGSEQ~~
WKFQELSQPRSH~~SLKVSNSPEPQKAVEQEDELSDVSQGGSKATTPASTANS~~DVATIP~~TDTPLK~~
EENEGFVKVTDAPNKSEISKHIEVQVAQETRNVSTGSAENEKSEVQAIIESTPELDM~~DKDL~~SG



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YKGSSTPTKGIENKAFDRNTESLFEELSSAGSGLIGDVDEGADLLGMGREVENLILENTQLLET
KNALNIVKNDLIAKVDELTCEKDVLOGELEAVKQAKLKLEEKRELEEEELRKARAEAEEDARQKA
KDDDDSDIPTAQRKRFRVEMARVLMERNQYKERLMELQEAVRWTEMIRASRENPAEQEKKRSS
IWQFFSRLFSSSSNTTKKPEPPVNLKYNAPTSHVTPSVKKRSSTLSQLPGDKSKAFDFLSEETE
ASLASRREQREQYRQVKAHVQKESGGGGSPGRRRRRRRRRR