



LD Biopharma, Inc.
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Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human HSP90AA1 Protein
Catalog Number: hRP-1887
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human heat shock protein HSP90a (HSP90AA1) gene is an inducible molecular chaperone that functions as a homodimer. HSP90 protein aids in the proper folding of specific target proteins by use of an ATPase activity that is modulated by co-chaperones. The two isoforms of Hsp90 best studied in mammalian cells are the constitutively-expressed Hsp90 β and the stress-inducible Hsp90 α . Hsp90 α is required for peptide-loaded MHC1 complex processing in spermatocyte maturation and hERG ion channel maturation. Hsp90 α and Hsp90 β also have opposing effects on the biogenesis of KCNQ4 channels and on endothelial nitric oxide (eNOS) activity. HSP90 interacts and supports numerous proteins that promote oncogenesis, thus distinguishing Hsp90 as a cancer enabler as it is regarded as essential for malignant transformation and progression. Recent data indicated that the absence of Hsp90 α in tumor biopsies may serve as a biomarker for positive gastric cancer clinical outcomes.

Full-length human HSP90AA1 cDNA (853aa, Isoform-I) was constructed with codon optimization gene synthesis and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-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: HSP90 (Hsp90; HSP90A; HSPC1; LAP2; EL52; HEL-S-65p)
Accession Number: NP_001017963.2
Species: Human
Size: 20 μ g / Vial
Composition: 0.2 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.



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Key References

Zuehlke AD, et al., *Regulation and function of the human HSP90AA1 gene* Gene 570 (1), 8-16 (2015)

Kuballa P, et al., *Induction of heat shock protein HSPA6 (HSP70B') upon HSP90 inhibition in cancer cell lines.* FEBS Lett. 589 (13), 1450-1458 (2015)

Li D, et al., *A cytosolic heat shock protein 90 and cochaperone CDC37 complex is required for RIP3 activation during necroptosis.* Proc. Natl. Acad. Sci. U.S.A. 112 (16), 5017-5022 (2015)

Nanduri P, et al., *Chaperone-mediated 26S proteasome remodeling facilitates free K63 ubiquitin chain production and aggresome clearance.* J. Biol. Chem. 290 (15), 9455-9464 (2015)

Applications

1. May be used for in vitro HSP90a mediated inducible molecular chaperone regulation study in protein refolding for cancer cells by intracellular delivery of this protein with ProFectin Reagent.
2. May be used for protein-protein interaction assay.
3. As enzymatic substrate for various proteases.
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHGNLYFQGGFPPPCSGGDGSTPPGPSLRDRDCPAQSAEYPRDRLDP
RPGSPSEASSPPFLRSRAPVNWYQEKAQVFLWHLMVSGSTTLCLWKQPFHVSAFPVTASLAFR
QSQGAGQHLYKDLQPFILLRLLMPEETQTQDQPMEEEEVETFAFQAEIAQLMSLIINTFYSNKE
IFLRELISNSSDALDKIRYESLTDPSKLDGKELHINLIPNKQDRTLTIIVDTGIGMTKADLINN
LGTIAKSGTKAFMEALQAGADISMIGQFVGVFYSAYLVAEKVTVITKHNDDEQYAWESSAGGSF
TVRTDTGPEMGRGTKVILHLKEDQTEYLEERRIKEIVKKHSQFIGYPITLFEKERDKEVSDDE
AEEKEDKEEKEKEEKESEDKPEIEDVGSDEEEEEKKDGDKKKKKIKKEYIDQEELNKTKPIWT



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RNPDDITNEEYGEFYKSLTNDWEDHLAVKHFSVEGQLEFRALLFVPRRAPFDLFFENRKKKNNIK
LYVRRVFI MDNCEELIPEYLNFI RGVV DSEDLPLNISREMLQQSKILKVIRKNLVKKCLEL FTE
LAEDKENYKFFYEQFSKNIKLGIHEDSQNRKKLSELLRYYTSASGDEMVS LKDYCTRMKENQKH
IYYITGETKDQVANS AFVERLRKHGLEVIYMI EPIDEYCVQQLKEFEGKTLVSVTKEGLELPED
EEEEKKQEEKKTKFENLCKIMKDILEKKVEKVVSNRLVTSPCCIVTSTYGTANMERIMKAQA
LRDNSTMGYMAAKKHLEINPDHSIIETLRQKAEADKNDKSVKDLVILLYETALLSSGFSLEDPQ
THANRIYRMIKLG LGIDEDDPTADDTSAAVTEEMP PLEGDDDTSRMEEVD