

PRODUCT INFORMATION



Hsp90α (human recombinant)

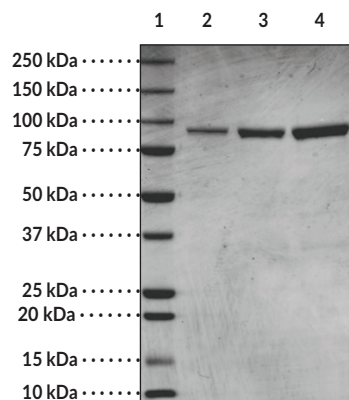
Item No. 22734

Overview and Properties

Synonym: Heat Shock Protein 90α
Source: Active N-terminal histidine-tagged human Hsp90α protein (full length) purified from *E. coli*.
Amino Acids: 2-732 (full length)
Uniprot No.: P07900
Molecular Weight: 87 kDa
Storage: -80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability: ≥6 months
Purity: *batch specific* (≥90% estimated by SDS-PAGE)
Supplied in: 50 mM HEPES, pH 8.0, 150 mM sodium chloride, 1 mM DTT, 10% glycerol
Protein Concentration: *batch specific* mg/ml
Activity: ATPase activity confirmed by ADP detection assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: Hsp90α (1 µg)
Lane 3: Hsp90α (2 µg)
Lane 4: Hsp90α (4 µg)

Representative gel image shown; actual purity may vary between each batch.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

Heat shock protein 90 α (Hsp90 α) is the inducible cytosolic isoform of Hsp90 that is encoded by *HSP90AA* in humans.¹ Hsp90 is a multidomain protein that functions as a molecular chaperone to assist in folding and activation of nascent peptides, refolding unfolded or misfolded proteins, and preventing protein aggregation.² C-terminal dimerization of Hsp90, coupled with ATPase molecular clamp activity induces a conformational change in the N-terminal nucleotide binding domain that facilitates substrate binding and initiates the chaperone cycle.³ Hsp90 interacts with many co-chaperones during its chaperone cycle including p23 and Sba1, which help recruit substrates to the Hsp90 complex, Hsp70 (Item Nos. 22739 | 23002), which loads nascent polypeptides onto the Hsp90 dimer, and the ATPase activator Aha1 that promotes ATP hydrolysis and substrate release.^{4,5} Hsp90 is overexpressed in cancer cells and stabilizes client proteins that promote oncogenesis, including transcription factors, signaling proteins, and kinases.^{1,5} Hsp90 also decreases α -synuclein fibril formation and toxicity as well as Q35 aggregation in *in vitro* models of Parkinson's and Huntington's disease, respectively, implying a role in neurodegenerative disease.⁶

References

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2. Fink, A.L. Chaperone-mediated protein folding. *Physiol. Rev.* **79(2)**, 425-449 (1999).
3. Prodromou, C., Panaretou, B., Chohan, S., *et al.* The ATPase cycle of Hsp90 drives a molecular 'clamp' via transient dimerization of the N-terminal domains. *EMBO J.* **19(16)**, 4383-4392 (2000).
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5. Li, J. and Buchner, J. Structure, function and regulation of the hsp90 machinery. *Biomed. J.* **36(3)**, 106-117 (2013).
6. Lackie, R.E., Maciejewski, A., Ostapchenko, V.G., *et al.* The Hsp70/Hsp90 chaperone machinery in neurodegenerative diseases. *Front. Neurosci.* **11:254** (2017).

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