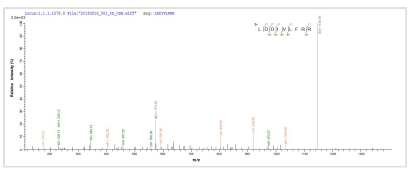
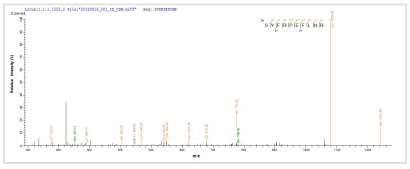
Recombinant Trypanosoma cruzi Heat shock protein 100 (HSP100), partial

Product Code	CSB-EP517681TQY
Abbreviation	Recombinant Trypanosoma cruzi HSP100 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	O15885
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Trypanosoma cruzi
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	NSPKGLEATREKVWQVVRSYFRPEFLNRLDDIVLFRRLGFGELHEIIDLIVAEVN GRLRSQDILLEVTDEAKNFVLENAFDAEMGARPLRRWVEKYITTEVSRMILAQ QLPPNSTVRVLVNGSQGKLAFSVKRSFVSE
Research Area	Signal Transduction
Source	E.coli
Target Names	HSP100
Protein Names	Recommended name: Heat shock protein 100Alternative name(s): Protein CLP
Expression Region	1-138aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	22.9 kDa
Protein Length	Partial
Image	



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP517681TQY could indicate that this peptide derived from E.coli-expressed Trypanosoma cruzi HSP100.



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Description

Producing recombinant Trypanosoma cruzi Heat shock protein 100 (HSP100) in E. coli involves multiple steps. Initially, the gene encoding the partial HSP100 protein (1-138aa) is co-cloned into an expression vector with an N-terminal 10xHis-tag and C-terminal Myc-tag gene and transformed into E. coli cells. The bacteria are grown under specific conditions to induce protein expression. Cells are harvested and lysed to release the recombinant HSP100 protein. Purification is achieved using the affinity chromatography method. Protein purity is assessed using SDS-PAGE,exceeding 90%.

HSP100 in T. cruzi is part of a broader family of heat shock proteins that are conserved across different species and play critical roles in cytoprotection, differentiation, disease progression, and transmission [6]. HSPs, including HSP100, are involved in gene regulation and mRNA stability during heat shock conditions in T. cruzi [2]. These proteins are essential for stress-induced stage differentiation and are significant for disease progression and transmission [3]. The upregulation of HSP100 is observed in response to environmental stresses such as severe heat shock, leading to nucleolar accumulation of mRNAs in T. cruzi [4]. Furthermore, the induction of heat shock proteins, including HSP100, is implicated in the differentiation of T. cruzi into infective metacyclic forms, preparing the parasite for host invasion [5].

References:
[1] T. Ürményi, R. Silva, & E. Rondinelli, The heat shock proteins of trypanosoma cruzi,, p. 119-135, 2013. https://doi.org/10.1007/978-94-007-7305-9_5
[2] D. Rodrigues, R. Silva, E. Rondinelli, & T. Ürményi, Trypanosoma cruzi: modulation of hsp70 mrna stability by untranslated regions during heat shock, Experimental Parasitology, vol. 126, no. 2, p. 245-253, 2010. https://doi.org/10.1016/j.exppara.2010.05.009
[3] S. Bentley and A. Boshoff, trypanosoma bruceij protein 2 functionally cooperates with the cytosolic hsp70.4 and hsp70 proteins,, 2019. https://doi.org/10.1101/641704
[4] E. Nazer, R. Verdun, & D. Sánchez, Severe heat shock induces nucleolar accumulation of mrnas in trypanosoma cruzi, Plos One, vol. 7, no. 8, p. e43715, 2012. https://doi.org/10.1371/journal.pone.0043715
[5] A. Alcina, A. Urzainqui, & L. Carrasco, The heat?shock response in trypanosoma cruzi, European Journal of Biochemistry, vol. 172, no. 1, p. 121-127, 1988. https://doi.org/10.1111/j.1432-1033.1988.tb13863.x

Shelf Life

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