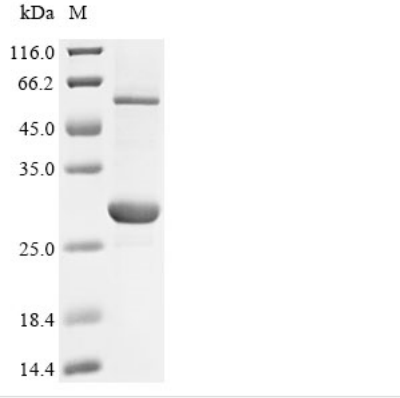
Recombinant Hypoderma lineatum Hypodermin-A

Product Code	CSB-EP327428HRQ(M)
Abbreviation	Recombinant Hypoderma lineatum Hypodermin-A protein
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.	P35587
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Hypoderma lineatum(Early cattle grub)(Common cattle grub)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	IVGGVESKIEDFPWQISLQRDGRHYCGGSIYSKNVIITAAHCLRNVVAEELRVR VGSSYWEHGGSLRNISKFQIHESYVEPTKEYDVALLKLDSDLSFNSTIKAIELTN EIPPEYADAIVSGWGETLVPPPGIPDQLRSVDVKIIHREKCASRNFGYGSNIKAS MICAYAIGKDSCQGDSGGPLVVNNLLVGVVSWGIDCARPSYPGVYVDVSHVR SWIVSNAESI
Research Area	Others
Source	E.coli
Target Names	N/A
Expression Region	31-256aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	28.8 kDa
Protein Length	Full Length of Mature Protein

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Hypoderma lineatum Hypodermin-A is produced in E. coli and contains the complete mature protein sequence spanning amino acids 31 to 256. The protein carries an N-terminal 6xHis tag, which makes purification and detection more straightforward. SDS-PAGE analysis shows the product achieves purity levels above 85%, which appears sufficient for most research applications.

Hypodermin-A is a protease that comes from the common cattle grub, Hypoderma lineatum. This protein seems to play an important role in how the parasite completes its life cycle, likely helping it invade tissues and obtain nutrients. Understanding this protein may be significant for grasping how parasitic mechanisms work and could potentially lead to better control strategies. This makes it a useful research tool in parasitology studies.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Antibody Development and Immunological Studies

This recombinant Hypodermin-A protein could work well as an immunogen for creating polyclonal or monoclonal antibodies that specifically target Hypoderma lineatum. The N-terminal 6xHis tag should make purification easier and help with immobilization during antibody screening assays. These antibodies might prove valuable for studying cattle grub biology, examining host-parasite interactions, and creating detection methods for parasitological research. The protein's >85% purity level appears adequate for immunization protocols and follow-up antibody characterization work.

2. Protein-Protein Interaction Studies

Researchers can use the 6xHis-tagged recombinant protein in pull-down assays to find potential binding partners from cattle host cell lysates or other relevant biological samples. The histidine tag allows for efficient attachment to nickel-based affinity matrices, which can then capture interacting proteins. This method could help reveal the molecular mechanisms that drive host-parasite interactions during cattle grub infections. Mass spectrometry analysis of the pulled-down complexes might uncover new protein interactions that are relevant to parasitic biology.

3. Biochemical Characterization and Enzymatic Assays

The purified recombinant protein can undergo detailed biochemical analysis, including molecular weight determination, isoelectric point measurement, and stability testing across different pH and temperature ranges. While biological activity hasn't been tested yet, researchers could screen the protein against various substrate panels to identify possible enzymatic activities. The mature

protein region (31-256aa) represents what is likely the functionally important domain, making it well-suited for structure-function relationship studies through limited proteolysis and chemical modification experiments.

4. Comparative Parasitology Research

This recombinant Hypodermin-A could serve as a reference protein for comparative studies alongside similar proteins from related Hypoderma species or other parasitic dipterans. Cross-reactivity studies using this protein with sera from cattle infected with different parasitic species might provide insights into antigenic relationships and evolutionary conservation patterns. The standardized recombinant format should help ensure consistent results across different research laboratories that study cattle grub biology and related parasitic organisms.

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