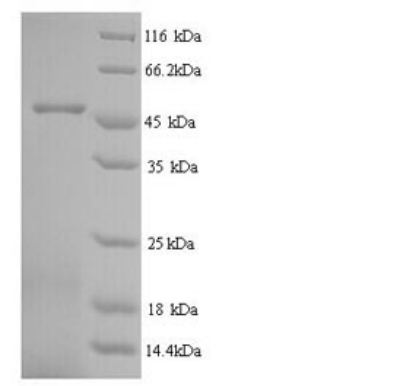
Recombinant Apis mellifera Major royal jelly protein 1 (MRJP1)

Product Code	CSB-YP522725DNK
Relevance	Major royal jelly protein 1: induces the differentiation of honeybee larvae into queens through an Egfr-mediated signaling pathway. Promotes body size increase by activating p70 S6 kinase, stimulates ovary development by augmenting the titer of vitellogenin (Vg) and juvenile hormone, and reduces developmental time by increasing the activity of mitogen-activated protein kinase and inducing the 20-hydroxyecdysone protein (20E). Most abundant protein found in the royal jelly which is the food of the queen honey bee larva. The royal jelly determines the development of the young larvae and is responsible for the high reproductive ability of the honeybee queen.Jellein-1: has antibacterial activity against the Gram-positive bacteria S.aureus ATCC 6535, S.saprophyticus and B.subtilis CCT2471, and the Gram-negative bacteria E.coli CCT1371, E.cloacae ATCC 23355, K.pneumoniae ATCC 13883 and P.aeruginosa ATCC 27853, and antifungal activity against C.albicans. Lack cytolytic activity and does not induce rat peritoneal mast cell degranulation.Jellein-2: has antibacterial activity against the Gram-positive bacteria S.aureus ATCC 6535, S.saprophyticus and B.subtilis CCT2471, and the Gram-negative bacteria E.coli CCT1371, E.cloacae ATCC 23355, K.pneumoniae ATCC 13883 and P.aeruginosa ATCC 27853, and antifungal activity against C.albicans. Lack cytolytic activity and does not induce rat peritoneal mast cell degranulation.Jellein-4: lacks antibacterial and antifungal activity. Lacks cytolytic activity and does not induce rat peritoneal mast cell degranulation.
Abbreviation	Recombinant Apis mellifera MRJP1 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.	O18330
Alias	56-kDa protein 4 ;p56kP-4Bee-milk proteinRoyalactin
Product Type	Recombinant Protein
Immunogen Species	Apis mellifera (Honeybee)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	NILRGESLNKSLPILHEWKFFDYDFGSDERRQDAILSGEYDYKNNYPSDIDQW HDKIFVTMLRYNGVPSSLNVISKKVGDGGPLLQPYPDWSFAKYDDCSGIVSAS KLAIDKCDRLWVLDSGLVNNTQPMCSPKLLTFDLTTSQLLKQVEIPHDVAVNAT TGKGRLSSLAVQSLDCNTNSDTMVYIADEKGEGLIVYHNSDDSFHRLTSNTFD YDPKFTKMTIDGESYTAQDGISGMALSPMTNNLYYSPVASTSLYYVNTEQFRT SDYQQNDIHYEGVQNILDTQSSAKVVSKSGVLFFGLVGDSALGCWNEHRTLE RHNIRTVAQSDETLQMIASMKIKEALPHVPIFDRYINREYILVLSNKMQKMVNND

	FNFDDVNFRIMNANVNELILNTRCENPDNDRTPFKISIHL
Research Area	Others
Source	Yeast
Target Names	MRJP1
Protein Names	Recommended name: Major royal jelly protein 1 Short name= MRJP-1 Alternative name(s): 56-kDa protein 4 Short name= p56kP-4 Bee-milk protein Royalactin Cleaved into the following 3 chains: 1. Jellein-1 Alternative name(s):
Expression Region	20-432aa
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	48.9kDa
Protein Length	Full Length of Mature Protein

Image



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

Description

The DNA fragment encoding the 20-432aa of the Apis mellifera MRJP1 protein was fused with N-terminal 6xHis tag gene and then was inserted into the expression vector, which was subsequently transfected into the yeast cells for expression. The resulting product was further purified to obtain the recombinant Apis mellifera MRJP1 protein. The purity of this recombinant MRJP1 protein is greater than 90% assessed by Bandscan software analysis combined with SDS-PAGE. This MRJP1 protein showed a band on the gel with a molecular weight of approximately 48 kDa.

MRJP1 belongs to the major royal jelly protein family, secreted by nurse bees into the royal jelly. MRJP1 provides pivotal amount of nutrients for the queen larvae as well as worker bees. Therefore, MRJP1 as major bee bread, it plays important roles in bee's life. MRJP1 usually is presented in the hypopharyngeal gland. Besides, it has been found in the cytoplasm of brain cells. Some studies identified that MRJP1 could influence the brain function, which is probably related to the development of learning ability of brain. Owing to the special biological properties, the functions of MRJP1 has been investigated widely. Researchers further observed that MRJP1 is consider as a key modulator in the longevity, anti-oxidant, anti-tumor, and immune aspects.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	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.