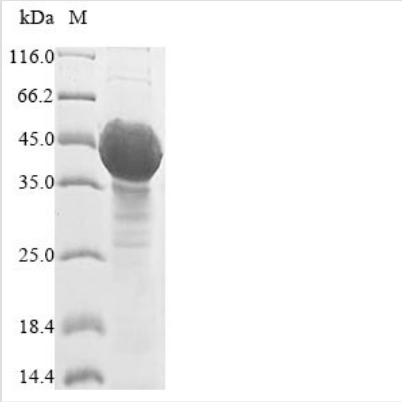
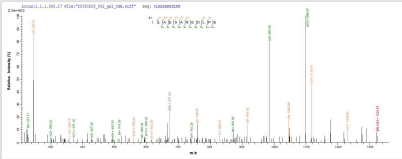
Recombinant Arabidopsis thaliana UDP-glycosyltransferase 89C1 (UGT89C1)

Product Code	CSB-YP873303DOA
Relevance	Flavonol 7-O-rhamnosyltransferase that acts on kaempferol 3-O-glucoside and other 3-O-glycosylated flavonols like quercetin 3-O-glucoside, quercetin 3-O-galactoside and isorhamnetin 3-O-glucoside. Shows a strict specificity for UDP-rhamnose as donor and does not act on flavonol aglycones or 3-O-glycosylated anthocyanins.
Abbreviation	Recombinant Mouse-ear cress UGT89C1 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.	Q9LNE6
Product Type	Recombinant Protein
Immunogen Species	Arabidopsis thaliana (Mouse-ear cress)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MTTTTTKKPHVLVIPFPQSGHMVPHLDLTHQILLRGATVTVLVTPKNSSYLDAL RSLHSPEHFKTLILPFPSHPCIPSGVESLQQLPLEAIVHMFDALSRLHDPLVDFL SRQPPSDLPDAILGSSFLSPWINKVADAFSIKSISFLPINAHSISVMWAQEDRSF FNDLETATTESYGLVINSFYDLEPEFVETVKTRFLNHHRIWTVGPLLPFKAGVD RGGQSSIPPAKVSAWLDSCPEDNSVVYVGFGSQIRLTAEQTAALAAALEKSSV RFIWAVRDAAKKVNSSDNSVEEDVIPAGFEERVKEKGLVIRGWAPQTMILEHR AVGSYLTHLGWGSVLEGMVGGVMLLAWPMQADHFFNTTLIVDKLRAAVRVGE NRDSVPDSDKLARILAESAREDLPERVTLMKLREKAMEAIKEGGSSYKNLDEL VAEMCL
Research Area	Others
Source	Yeast
Target Names	UGT89C1
Protein Names	Flavonol 7-O-rhamnosyltransferase UDP-rhamnose: flavonol 7-O-rhamnosyltransferase
Expression Region	1-435aa
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
Mol. Weight	50.6 kDa
Protein Length	Full length

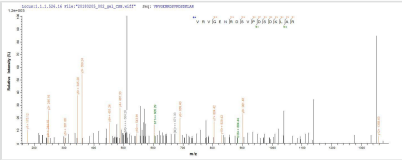
Image



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



Based on the SEQUEST from database of Yeast host and target protein, the LC-MS/MS Analysis result of CSB-YP873303DOA could indicate that this peptide derived from Yeast-expressed Arabidopsis thaliana (Mouse-ear cress) UGT89C1.



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Description

Recombinant Arabidopsis thaliana UDP-glycosyltransferase 89C1 (UGT89C1) is expressed in a yeast system and contains the full-length protein of 435 amino acids. The protein includes an N-terminal 10xHis-tag that makes purification and detection more straightforward. SDS-PAGE analysis shows it reaches a purity above 85%, which should deliver reliable results across different applications. This product is for research use only.

UDP-glycosyltransferase 89C1 (UGT89C1) from Arabidopsis thaliana appears to be involved in glycosylating small molecules, which affects their solubility, stability, and activity in the plant. This enzymatic change likely plays an important role in multiple metabolic pathways and may influence processes like plant defense responses and secondary metabolite production. Studying how UGT89C1 works could help us better understand plant physiology and how plants adapt to their environment.

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. Protein-Protein Interaction Studies Using His-Tag Pull-Down Assays

The N-terminal 10xHis-tag makes it possible to attach UGT89C1 to nickel-affinity resins for pull-down experiments. This method might help identify potential protein partners that interact with UGT89C1 in plant cell lysates or with purified candidate proteins. Since the yeast expression system provides proper eukaryotic folding, it's likely important for keeping native protein shapes intact during interaction studies. These experiments could potentially reveal regulatory proteins or metabolic pathway components that work together with this UDP-glycosyltransferase.

2. Antibody Development and Validation

The recombinant UGT89C1 protein can work as an immunogen for creating polyclonal or monoclonal antibodies that target this specific enzyme. The 85% purity level appears sufficient for immunization protocols, while the His-tag makes antigen purification and concentration much easier. Researchers can then validate these antibodies using the same recombinant protein in Western blot, ELISA, or immunoprecipitation assays. Such antibodies would become valuable research tools for tracking UGT89C1 expression patterns and determining where it's located within plant cells.

3. Biochemical Characterization and Enzyme Kinetics Analysis

The full-length recombinant protein offers a good foundation for detailed biochemical studies. Researchers can characterize UGT89C1 properties like optimal pH, temperature stability, and what cofactors it needs to function. While biological activity hasn't been tested yet, the protein could be evaluated for UDP-glycosyltransferase activity using different acceptor substrates and UDP-sugar donors. The His-tag makes protein purification simpler for determining concentrations and helps ensure consistent protein preparations that give reproducible kinetic measurements.

4. Comparative Functional Studies with Other UGT Family Members

This recombinant UGT89C1 can be used in side-by-side studies with other UDP-glycosyltransferase family members to investigate substrate specificity and differences in how they catalyze reactions. The standardized yeast expression system and His-tag purification approach allow researchers to use consistent preparation methods across different UGT proteins. These comparative studies may provide insights into evolutionary relationships and how the UGT89 subfamily in Arabidopsis thaliana has diversified functionally over time.

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.