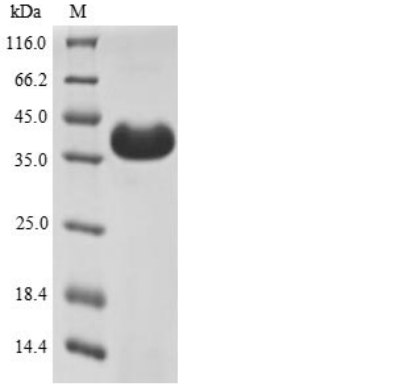
Recombinant Bovine Odorant-binding protein

Product Code	CSB-YP362133BOa4
Relevance	This protein binds a wide variety of chemical odorants.
Abbreviation	Recombinant Bovine Odorant-binding 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.	P07435
Product Type	Recombinant Protein
Immunogen Species	Bos taurus (Bovine)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	AQEEEAEQNLSELSGPWRTVYIGSTNPEKIQENGPFRTYFRELVFDDEKGTVD FYFSVKRDGKWKNVHVKATKQDDGTYVADYEGQNVFKIVSLSRTHLVAHNINV DKHGQTTELTELFVKLNVEDEDLEKFWKLTEDKGIDKKNVVNFLENEDHPHPE
Research Area	Others
Source	Yeast
Protein Names	Olfactory mucosa pyrazine-binding protein
Expression Region	1-159aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-sumostar-tagged
Mol. Weight	34.5 kDa
Protein Length	Full Length

Image



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

Description

Recombinant Bovine Odorant-binding protein gets expressed in a yeast system and comes with an N-terminal 6xHis-sumostar tag that makes purification and

detection much simpler. The complete protein covers amino acids 1 to 159. Purity appears to exceed 90% based on SDS-PAGE analysis. This product is meant for research use only and works well for different biochemical and structural studies that need high-purity protein.

Odorant-binding proteins (OBPs) are small, soluble proteins that transport odor molecules around. They seem to play a key role in how we detect and tell apart different smells by grabbing onto odorant molecules and helping move them to olfactory receptors. For researchers, OBPs matter because they help us figure out how smell works. Scientists can use them in studies about sensory biology and how molecules recognize each other.

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. Odorant Binding Affinity Studies

This recombinant bovine odorant-binding protein works well in fluorescence-based binding assays to study how it interacts with different odorant molecules. The N-terminal 6xHis-sumostar tag makes purification easy and allows for immobilization in surface plasmon resonance or other label-free binding studies. Scientists can test how strongly it binds to various volatile organic compounds to understand what ligands the protein prefers. These experiments might help us learn more about how cows smell things and the molecular details of odor recognition.

2. Protein-Protein Interaction Analysis

The tagged recombinant protein can act as bait in pull-down assays to find potential binding partners or regulatory proteins that interact with odorant-binding proteins. That 6xHis tag makes it straightforward to stick the protein onto nickel-based resins for co-immunoprecipitation experiments using bovine tissue lysates. This method could uncover protein networks involved in olfactory signal processing that we didn't know about before. The high purity level means less background noise in interaction studies.

3. Antibody Development and Validation

This purified recombinant protein can serve as an immunogen for making specific antibodies against bovine odorant-binding protein. It also works as a standard for antibody validation studies. The high purity and known sequence make it a good choice for ELISA development and Western blot controls. Scientists studying bovine olfactory tissues would likely benefit from having well-characterized antibodies for immunohistochemistry and protein localization studies. Since it's recombinant, the antigen quality stays consistent across different antibody production batches.

4. Structural and Biophysical Characterization

The purified protein can be put through various biophysical analyses. These might include circular dichroism spectroscopy to check secondary structure content and thermal stability studies. Nuclear magnetic resonance or X-ray crystallography studies could give detailed structural information about this bovine odorant-binding protein. The yeast expression system and high purity level make it suitable for structural biology work that requires large amounts of uniform protein. This kind of structural data would probably improve our understanding of how odorant-binding proteins are built and how they work.

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.