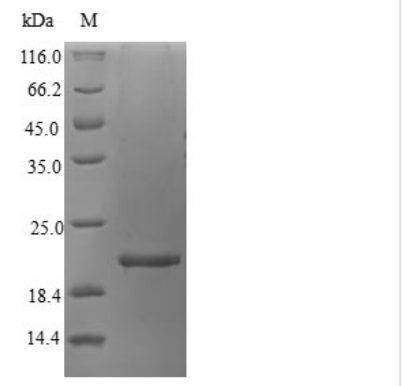
Recombinant Atlantic salmon Vertebrate ancient opsin?Partial

Product Code	CSB-EP517517SWI
Abbreviation	Recombinant Atlantic salmon Vertebrate ancient opsin 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.	O13018
Product Type	Recombinant Protein
Immunogen Species	Salmo salar (Atlantic salmon)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MDTLRIAVNGVSYNEASEIYKPHADPFTGPITNLAPWNFAVLATLMFVITSLSLF ENFTVMLATYKFKQLRQPLN
Research Area	others
Source	E.coli
Expression Region	1-75aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-B2M-tagged
Mol. Weight	22.5kDa
Protein Length	Partial

Image



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

Description

Recombinant Atlantic salmon Vertebrate ancient opsin is expressed in E. coli and features an N-terminal 6xHis-B2M tag. This partial protein spans amino acids 1-75. Purification appears to reach levels exceeding 90%, as confirmed by SDS-PAGE analysis. The protein seems suitable for research applications and

shows no detectable endotoxin levels.

Vertebrate ancient opsin is a light-sensitive protein that may be involved in non-visual photoreception. It likely plays a role in regulating circadian rhythms and other physiological processes influenced by light. This protein has drawn considerable interest from researchers trying to understand how light perception mechanisms evolved across different vertebrate species.

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 Pull-Down Assays

The N-terminal 6xHis-B2M tag allows for purification and immobilization of this recombinant Atlantic salmon vertebrate ancient opsin fragment on nickel-affinity resins. Scientists can potentially use this tagged protein as bait to fish out binding partners from salmon tissue lysates or other protein libraries. The partial sequence (1-75aa) might contain key interaction domains that could reveal binding motifs conserved through evolution. This strategy may help researchers piece together the molecular networks involving ancient opsins in early vertebrate vision systems.

2. Antibody Development and Validation

This purified recombinant protein fragment appears suitable as an immunogen for creating polyclonal or monoclonal antibodies specific to Atlantic salmon vertebrate ancient opsin. The high purity (>90%) should minimize cross-reactivity with contaminating proteins during immunization. Scientists can then use the same recombinant protein to test antibody specificity through ELISA, Western blot, or surface plasmon resonance assays. These antibodies would likely prove valuable for studying opsin expression patterns and localization in salmon tissues.

3. Structural and Biochemical Characterization Studies

Various biophysical analyses could be performed on this recombinant protein fragment to understand the structural properties of this ancient opsin domain. Circular dichroism spectroscopy, dynamic light scattering, and analytical ultracentrifugation may provide insights into secondary structure, oligomerization state, and stability. The 6xHis-B2M tag makes consistent purification possible, which should help with reproducible structural studies across different experimental conditions.

4. Evolutionary and Comparative Protein Analysis

This Atlantic salmon ancient opsin fragment may serve as a useful reference for

comparative studies with opsins from other vertebrate species. Scientists can perform sequence alignment, phylogenetic analysis, and cross-species binding studies to understand evolutionary relationships. The recombinant protein might be useful in competitive binding assays or cross-reactivity studies with antibodies or binding partners from related species to map conserved functional domains.

5. Tag-Based Detection Assay Development

The N-terminal 6xHis-B2M tag system opens up possibilities for developing sandwich-type detection assays using anti-His or anti-B2M antibodies. Scientists can establish quantitative assays for measuring protein concentration, stability, or degradation kinetics under various experimental conditions. This tagged protein could also work as a positive control or standard in assays designed to study opsin-related proteins in salmon research.

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.