

## IZUMO1 Protein, Human, Recombinant (His)

### General Information

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|-----------------------|--|
| Synonyms:             | izumo sperm-egg fusion 1; IZUMO  |
| Protein Construction: | A DNA sequence encoding the human IZUMO1 (AAH34769.1) (Met1-Arg292) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Cys 22 |
| Species:              | Human  |
| Expression Host:      | HEK293 Cells   |
| Accession:            | AAH34769.1   |
| Molecular Weight:     | 32.1 kDa (predicted); 43 kDa (reducing conditions)   |

### QC Testing

|                      |  |
|----------------------|--|
| Biological Activity: | Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.   |
| Purity:              | > 95 % as determined by SDS-PAGE   |
| Endotoxin:           | < 1.0 EU/μg of the protein as determined by the LAL method.  |
| Formulation:         | Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization. |

### Preparation and Storage

**Reconstitution:**  
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

**Stability & Storage:**  
It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

**Shipping:**  
In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Izumo is a sperm membrane protein that plays a key role in the fusion in the mouse. It has an Immunoglobulin (Ig) domain and an N-terminal domain for which neither the functions nor homologous sequences are known. Up to now, there four members has an N-terminal domain with significant homology to the N-terminal domain of Izumo. We call this domain the Izumo domain. The four proteins are Izumo 1, 2, 3, and 4. Izumo domain possesses the ability to form dimers, whereas the transmembrane domain or the cytoplasmic domain, or both of Izumo 1 are

required for the formation of multimers of a higher order. Izumo 1-3 are transmembrane proteins expressed specifically in the testis, and Izumo 4 is a soluble protein expressed in the testis and other tissues. Izumo 1, 3, and 4 formed protein complexes on sperm, Izumo 1 forming several larger complexes, and Izumo 3 and 4 forming a single larger complex. Izumo1 is essential for sperm-egg plasma membrane binding and fusion.

### Reference

Inoue N, et al. (2008) Putative sperm fusion protein IZUMO and the role of N-glycosylation. *Biochem Biophys Res Commun.* 377(3):910-4.

Ikram MK, et al. (2010) Four novel Loci (19q13, 6q24, 12q24, and 5q14) influence the microcirculation in vivo. *PLoS Genet.* 6(10):e1001184.

Sklar P, et al. (2011) Large-scale genome-wide association analysis of bipolar disorder identifies a new susceptibility locus near ODZ4. *Nat Genet.* 43(10):977-83.

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Tel:781-999-4286 E\_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481