

## Recombinant Mouse Tie-2-Fc Chimera (carrier-free)

|                          |   |
|--------------------------|---|
| <b>Catalog# / Size</b>   | 782102 / 10 µg<br>782104 / 25 µg<br>782106 / 100 µg   |
| <b>Regulatory Status</b> | RUO   |
| <b>Other Names</b>       | Angiopoietin-1 receptor, Endothelial tyrosine kinase, HYK, STK1, Tunica interna endothelial cell kinase, Tyrosine kinase with Ig and EGF homology domains-2, Tyrosine-protein kinase receptor TEK, Tyrosine-protein kinase receptor TIE-2 |

**Description** Tie-2, also known as CD202b and TEK, is a member of the receptor tyrosine kinase (RTK) family of proteins. It is expressed in endothelial cells, their progenitor cells, quiescent hematopoietic stem cells (HSCs), and a subpopulation of monocytes. Angiopoietin proteins are identified as the ligands for Tie-2. Angiopoietin-1 (ANGPT-1) is an activator of Tie-2, inducing its autophosphorylation to promote, maintain, and stabilize mature vessels and to maintain HSCs in quiescent state. The ANGPT-1/Tie-2 system is required for the differentiation, proliferation and survival of endothelial cells during embryogenesis and adult vascular homeostasis. Autophosphorylation of Y1106 on Tie-2 is essential for binding and phosphorylation of the downstream-of-kinase-related (Dok-R) docking protein, in turn to regulate cell migration during sprouting angiogenesis. In addition, phosphorylated Tie-2 also associates with Grb7 adaptor protein and tyrosine phosphatase SHP2 to regulate cell migration and cell survival. Excess Tie-2 signaling in skin leads to a psoriasis, along with epidermal hyperplasia, inflammatory cell recruitment and altered dermal angiogenesis. ANGPT-2 is identified as a natural antagonist for ANGPT-1 and Tie-2. Overexpression of ANGPT-2 results in low levels of phosphorylated Tie-2, vascular defect and impaired blood vessel formation. Mouse ANGPT-3 and human ANGPT-4 show distinct distribution patterns. ANGPT-3 and ANGPT-4 function as an antagonist and an agonist of Tie-2, respectively. It has been reported that Tie-2 can phosphorylate Grb7, Grb14 (Growth Factor Receptor Bound) adaptor protein and p85 subunit of PI3 kinase. Vascular endothelial protein-tyrosine phosphatase (VE-PTP, mouse orthologue of human protein tyrosine phosphatase-β, HPTPβ) and human cellular tyrosine phosphatase A (HCPTPA) are regulators that modulate ANGPT/Tie-2 function. Some evidences indicates that Tie-1 dynamically forms a heterodimer with Tie-2 and may inhibit the activation of Tie-2.

### Product Details

---

|                               |   |
|-------------------------------|---|
| <b>Host Species</b>           | 293E cells  |
| <b>Source</b>                 | Mouse Tie-2, amino acid Ala23-Lys744 (Accession # CAA47857.1) with a C-terminal human IgG Fc tag, was expressed in 293E cells.  |
| <b>Molecular Mass</b>         | The 957 amino acid recombinant protein has a predicted molecular mass of approximately 106.9 kD. The DTT-reduced and non-reduced protein migrates at approximately 120 kD and 180 kD respectively by SDS-PAGE. The predicted N-terminal amino acid is Ala.  |
| <b>Purity</b>                 | > 95%, as determined by Coomassie stained SDS-PAGE.   |
| <b>Formulation</b>            | 0.22 µm filtered protein solution is in PBS, 10% glycerol.  |
| <b>Endotoxin Level</b>        | Less than 0.1 EU per µg protein as determined by the LAL method.  |
| <b>Concentration</b>          | 10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size is lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.  |
| <b>Storage &amp; Handling</b> | Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. <b>Avoid repeated freeze/thaw cycles.</b> |
| <b>Activity</b>               | When human Angiopoietin-2 (Cat. No. 753102) is immobilized at 4 µg/mL using anti-His antibody (Cat. No. 652501), mouse Tie-2-Fc Chimera binds with an EC <sub>50</sub> of 20 - 80 ng/mL in a functional ELISA.  |

**Application** [Bioassay](#)

**Application Notes** BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our [100% satisfaction guarantee](#). If you have any concerns, contact us at [tech@biolegend.com](mailto:tech@biolegend.com).

## Antigen Details

---

|                         |   |
|-------------------------|---|
| <b>Structure</b>        | Disulfide-linked homodimer  |
| <b>Distribution</b>     | Endothelial cells and their progenitors, quiescent hematopoietic stem cells (HSCs), and a subpopulation of monocytes; plasma membrane.  |
| <b>Function</b>         | Tyrosine-protein kinase that acts as cell-surface receptor for ANGPT1, ANGPT2 and ANGPT4 and regulates angiogenesis, endothelial cell survival, proliferation, migration, adhesion and cell spreading, reorganization of the actin cytoskeleton, but also maintenance of vascular quiescence. |
| <b>Ligand/Receptor</b>  | ANGPT-1, ANGPT-2, ANGPT-3, ANGPT-4  |
| <b>Bioactivity</b>      | Measured in a binding assay with human ANG-2.   |
| <b>Cell Targets</b>     | Grb14, Grb7 Grb2, SHP2, p85 subunit of PI3 kinase   |
| <b>Cell Type</b>        | Epithelial cells, Hematopoietic stem and progenitors, Monocytes   |
| <b>Biology Area</b>     | Angiogenesis, Cell Biology, Immunology  |
| <b>Molecular Family</b> | Adhesion Molecules, CD Molecules, Soluble Receptors   |

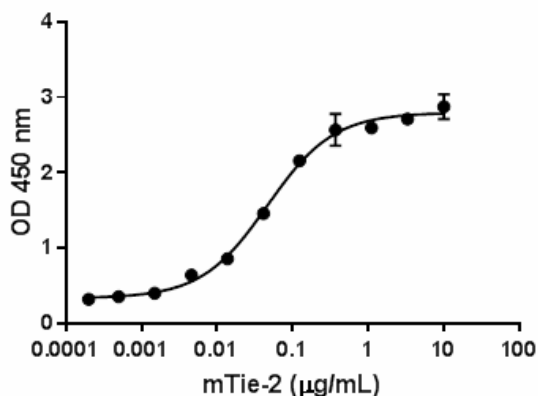
### Antigen References

1. Davis S, *et al.* 1996. *Cell*. 87:1161.
2. Maisonpierre PC, *et al.* 1997. *Science*. 277:55.
3. Teichert-Kuliszewska K, *et al.* 2001. *Cardiovasc. Res.* 49:659.
4. Jones N, *et al.* 2003. *Mol. Cell. Biol.* 23:2658.
5. Sturk C, Dumont DJ. 2010. *Cell. Commun. Signal.* 8:30.
6. Augustin HG, *et al.* 2009. *Nat. Rev. Mol. Cell. Biol.* 10:165.
7. Reiss Y, *et al.* 2007. *Circ. Res.* 101:88.
8. Voskas D, *et al.* 2005. *Am. J. Pathol.* 166:843.
9. Fachinger G, *et al.* 1999. *Oncogene*. 18:5948.
10. Dumont DJ, *et al.* 1994. *Genes Dev.* 8:1897.
11. Jones N, *et al.* 1999. *J. Biol. Chem.* 274:30896.
12. Jones N, *et al.* 2001. *Nat. Rev. Mol. Cell. Biol.* 2:257.
13. Lee HJ, *et al.* 2004. *FASEB J.* 18:1200.
14. Sato TN, *et al.* 1995. *Nature*. 376:70.
15. Seegar TC, *et al.* 2010. *Mol. Cell.* 37:643.

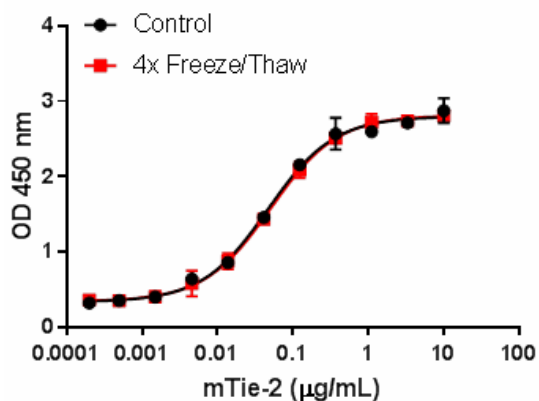
**Gene ID** [21687](#)

## Product Data

---



When human Angiopoietin-2 (Cat. No. 753102) is immobilized at 4 µg/mL using anti-His antibody (Cat. No. 652501), mouse Tie-2-Fc Chimera binds with an EC<sub>50</sub> of 20 - 80 ng/mL.



**Stability testing for Mouse Tie-2-Fc Chimera.** Mouse Tie-2-Fc Chimera was aliquoted in PBS, 10% glycerol at 0.2 mg/mL. One aliquot was frozen and thawed four times (4x Freeze/Thaw), and compared to a control kept at 4°C (Control). The samples were tested in a binding assay with human Angiopoietin-2.

For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

\*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, [www.biolegend.com/ordering#license](http://www.biolegend.com/ordering#license)). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 [www.biolegend.com](http://www.biolegend.com)  
 Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587