**Product Information**

**TIE-2/FC CHIMERA**
**Human, Recombinant**
**Expressed in mouse NSO cells**

Product Number T 1691

**Product Description**

Tie-1/Tie (tyrosine kinase with Ig and EGF homology domains) and Tie-2/Tek comprise a receptor tyrosine kinase (RTK) subfamily with unique structural characteristics: two immunoglobulin-like domains flanking three epidermal growth factor (EGF)-like domains followed by three fibronectin type III-like repeats in the extracellular region and a split tyrosine kinase domain in the cytoplasmic region. Human Tie-2 cDNA encodes an 1124 amino acid residue precursor protein with an 18 residue putative signal peptide, a 727 residue extracellular domain and a 354 residue cytoplasmic domain.

Tie-1 and Tie-2 define a new class of receptor tyrosine kinases that are expressed primarily on endothelial and hematopoietic progenitor cells and play critical roles in angiogenesis, vasculogenesis and hematopoiesis. Tie-1 and Tie-2 are specifically expressed in developing vascular endothelial cells. Two ligands that bind Tie have been identified, angiopoietin-1 and angiopoietin-2. These ligands bind Tie-2 with high affinity and exhibit no proliferative effect on endothelial cells. Endothelial cells express angiopoietin-2 mRNA and protein, indicating the potential for autocrine activation of angiopoietin/Tie-2. Tie-2 and angiopoietin-1 are expressed in normal human arteries and veins, suggesting that the role of angiopoietin/Tie-2 may extend beyond embryonic angiogenesis to maintaining integrity of the adult vasculature. Adhesion of Tie-2 cells induced by angiopoietin-1 enhanced the proliferation of hematopoietic progenitor cells. Tie-2 is an important mediator of tumor angiogenesis. Findings demonstrate a role for the Tie-2 pathway in pathologic angiogenesis, suggesting that targeting this pathway may yield effective anti-angiogenic agents for treatment of cancer and other angiogenic diseases.

A human recombinant form of Tie-2/Fc encoded by cDNA is expressed in mouse NSO cells. The cDNA sequence encodes the extracellular domain of human Tie-2 and is fused to the carboxy-terminal 6X histidine-tagged Fc region of human IgG, via a polypeptide linker.

The recombinant mature Tie-2/Fc is a disulfide-linked homodimeric protein. Based on N-terminal sequencing, rhTie-2/Fc has Ala 23 at the amino-terminus. Human Tie-2/Fc monomer has a calculated molecular mass of approximately 100 kDa. As a result of glycosylation, the recombinant protein migrates as an approximately 165 kDa protein in SDS-PAGE under reducing conditions.

**Reagents**

Lyophilized from a 0.2 µm filtered solution in phosphate-buffered saline (PBS).

**Storage/Stability**

Store at −20 °C.

After reconstitution store at 2 °C-8 °C for one month. For extended storage, freeze working in aliquots. Repeated freezing and thawing is not recommended.

**Product Profile**

The activity of Tie-2/Fc is measured in a functional ELISA assay. When rhTie-2/Fc is immobilized at 4 µg/ml (100 µl/well), it binds rhAngiopoietin-2 with a linear range of 0.5–50 ng/ml.

**Reconstitution**

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 100 µg/ml.

**References**


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