Data Sheet (Cat.No.TMPY-04530)

TargetMol

VEGFR2/KDR Protein, Human, Recombinant (His & GST)

General Information

Synonyms:	Flk-1;VEGFR2;kinase insert domain receptor;FLK1;CD309;VEGFR
Protein Construction:	A DNA sequence encoding the human KDR (NP_002244) (Asp807-Val1356) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P35968-1
Molecular Weight:	89.3 kDa (predicted); 110 kDa (reducing conditions)

QC Testing

Biological Activity:	The specific activity was determined to be 10 nmol/min/mg using Poly(Glu,Tyr) 4:1 as substrate.
Purity:	≥ 70 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 50 mM Tris, 100 mM NaCl, pH 8.0, 10% gly, 2 mM GSH.

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 the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

VEGFR2 also called KDR or Flk-1, is identified as the receptor for VEGF and VEGFC and an early marker for endothelial cell progenitors, whose expression is restricted to endothelial cells in vivo. VEGFR2 was shown to be the primary signal transducer for angiogenesis and the development of pathological conditions such as cancer and diabetic retinopathy. It has been shown that VEGFR2 is expressed mainly in the endothelial cells, and the expression is upregulated in the tumor vasculature. Thus the inhibition of VEGFR2 activity and its downstream signaling are important targets for the treatment of diseases involving angiogenesis. VEGFR2 transduces the major signals for angiogenesis via its strong tyrosine kinase activity. However, unlike other representative tyrosine kinase receptors, VEGFR2 does not use the Ras pathway as major downstream signaling but rather uses the

phospholipase C-protein kinase C pathway to signal mitogen-activated protein (MAP)-kinase activation and DNA synthesis. VEGFR2 is a direct and major signal transducer for pathological angiogenesis, including cancer and diabetic retinopathy, in cooperation with many other signaling partners; thus, VEGFR2 and its downstream signaling appear to be critical targets for the suppression of these diseases. VEGF and VEGFR2-mediated survival signaling are critical to endothelial cell survival, maintenance of the vasculature and alveolar structure, and regeneration of lung tissue. Reduced VEGF and VEGFR2 expression in emphysematous lungs has been linked to increased endothelial cell death and vascular regression.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Shibuya M. (2006) Vascular endothelial growth factor (VEGF)-Receptor2: its biological functions, major signaling pathway, and specific ligand VEGF-E. Endothelium. 13(2): 63-9.

Marwick JA,et al.(2010) Cigarette smoke regulates VEGFR2-mediated survival signaling in rat lungs. J Inflamm (Lond). 7(1): 11.

Bruns AF,et al.(2010) Ligand-stimulated VEGFR2 signaling is regulated by co-ordinated trafficking and proteolysis. Traffic. 11(1): 161-74.

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