Anti-Human VEGFR2 (Ramucirumab)

IVMB0488

Product Information

Product SKU:	IVMB0488	**Clone**:	IMC-1121B	**Target**:	VEGFR2
Size:	100 mg, 50 mg, 25 mg, 5.0 mg, 1.0 mg			**Isotype**:	Human IgG1κ

Additional Information

Reactivity:	Human	**Host Species**:	Human
Antibody Type:	Biosimilar Recombinant Human Monoclonal Antibody	**Expression Host**:	HEK-293 Cells

Immunogen Information

Background:

Vascular endothelial growth factors (VEGF) and VEGF receptors (VEGFR) play an essential role in angiogenesis[1]. There are three VEGFRs: VEGFR-1, VEGFR-2, and VEGFR-3. VEGFR- 1 and VEGFR-2 are responsible for angiogenesis, and VEGFR-3 affects lymphogenesis. In the pathogenesis of diseases including diabetes mellitus, rheumatoid arthritis, and cancer, new blood vessel formation is highjacked. Changes at the VEGF/VEGFR-2 axis are particularly potent at allowing VEGF-induced proliferation, migration, and vascular endothelial cell differentiation during tumor angiogenesis. Additionally, VEGFR-2 is upregulated in tumor vascular endothelial cells, and VEGF levels are associated with poor prognosis and resistance to chemotherapy. Consequently, the VEGF/VEGFR axis is a prime anti-cancer target. Blocking VEGF/VEGFR-2 with Ramucirumab inhibits tumor growth in animal models and cancer patients[2], [3], [4], and Ramucirumab is approved by the US Food and Drug Administration for treatment of various cancers[5]. Ramucirumab blocks all known VEGFs from binding to VEGFR-2[4], [6]. Ramucirumab specifically and potently inhibits VEGFR-2 by binding to the VEGF-binding domain at an epitope located within VEGFR-2 extracellular Ig domain 3[7]. Ramucirumab inhibits VEGF/VEGF-2 interaction 1 , VEGFR-2 phosphorylation[7], VEGF-induced VEGFR-2 activation[1], VEGF-stimulated cellular migration[6] and proliferation[1] , and prolongs the survival of leukemia-inoculated mice[6]. Ramucirumab (IMC-1121B) was fully humanized from chimeric antibody IMC-1121[1], which was constructed from a Fab fragment (Hu-1121 Fab) isolated by immunopanning against VEGFR-2 under stringent conditions using a VL-shuffled library and the VH gene segment Hu- 2C6 Fab[6], [7]. The original library

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was constructed from spleen cells of mice immunized with a soluble form of VEGFR-2[8]. Ramucirumab was converted into a full length bivalent IgG1 antibody from the Fab fragment 1121[7].

Ramucirumab, clone IMC-1121B, a non-therapeutic biosimilar antibody for research use only was developed recombinantly and has the same variable regions as the original therapeutic.

Endotoxin Level: < 1.0 EU/mg as determined by the LAL method

Applications: ELISA

Synonyms: Ramucirumab, VEGFR-2, 947687-13-0

Antigen Distribution: VEGFR-2 is widely expressed by vascular endothelial cells, some vascular tumors, carcinomas, malignant melanomas, and lymphomas. Certain leukemia cells express functional VEGFR on the cell surface.

Immunogen: Human VEGFR2

Formulation: This biosimilar antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

Specificity: This non-therapeutic biosimilar antibody uses the same variable region sequence as the therapeutic antibody Ramucirumab. Ramucirumab activity is directed against human vascular endothelial growth factor receptor-2 (VEGFR-2; also known as kinase insert domain-containing receptor, KDR).

Product Preparation: Recombinant biosimilar antibodies are manufactured in an animal free facility using onlyin vitroprotein free cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

Storage & Handling: Functional grade biosimilar antibodies may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at -80°C. Avoid Repeated Freeze Thaw Cycles.