

## IVMB0487

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### Product Information

<b>Product SKU:</b> IVMB0487	<b>Clone:</b> IMC-3G3	<b>Target:</b> PDGF R $\alpha$
<b>Size:</b> 500 $\mu$ g		<b>Isotype:</b> Human IgG1k

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### Additional Information

<b>Reactivity:</b> Human	<b>Host Species:</b> Human
<b>Antibody Type:</b> Biosimilar Recombinant Human Monoclonal Antibody	<b>Expression Host:</b> HEK-293 Cells

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### Immunogen Information

**Background:** Platelet-derived growth factor receptor (PDGFR) is a class III receptor tyrosine kinase that upon binding to PDGF molecules, dimerizes and activates, triggering an intracellular signaling cascade essential to normal embryogenesis, development, migration, survival signaling, proliferation, cellular chemotaxis, and intracellular calcium metabolism<sup>1</sup>. Hyperactive signaling along the PDGF/PDGFR axis drives pathogenesis in nonmalignant disorders (e.g., atherosclerosis, pulmonary fibrosis) and can promote tumor growth<sup>1</sup> or neurodegenerative disease<sup>2</sup>. PDGFR is a target for anticancer therapeutic development<sup>1</sup>. PDGF/PDGFR signaling influences cancer biology via autocrine growth stimulation of cancer cells, regulation of stromal-derived fibroblasts, and regulation of angiogenesis.

Olaratumab was developed as an anticancer therapeutic agent<sup>1</sup>. Human IgG transgenic mice were immunized with PAE R $\alpha$  cells and boosted with human PDGFR $\alpha$  extracellular domain (ECD)<sup>3</sup>. Splenocytes with high serum PDGFR $\alpha$  binding activity and high blocking titers against the PDGF/PDGFR $\alpha$  ligand receptor interaction were isolated, fused with myeloma cells, subcloned, and purified. Antibodies were further tested for binding to PDGFR $\alpha$  by direct binding ELISA and surface plasmon resonance, for blocking activity in solid-phase and cell-based ligand binding assays, and for receptor/ligand activation. Olaratumab was found to inhibit PDGF stimulated mitogenesis, PDGF-AA and PDGF-BB induced receptor phosphorylation, activation of the MAPK proliferation and Akt survival pathways, and in mouse xenograft models inhibits tumor growth and PDGFR $\alpha$  stimulation. Additionally,

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olaratumab inhibits cell proliferation and survival in mouse and human hepatoma cell lines 4 as well as PDGF-AA induced receptor phosphorylation and cell proliferation in ovarian cancer cells<sup>5</sup>. Clinical trials were initiated on the basis of these results<sup>6, 7, 8, 9</sup>.

Olaratumab shows no cross reactivity with PDGFR $\beta$  in solid phase ELISA or cell-based phosphorylation assays, nor to mouse PDGFR $\alpha$  as determined by ELISA, mitogenic, and phosphorylation assays<sup>3</sup>.

Olaratumab clone AL10, 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:** Anti PDGFR, DB06043, IMC-3G3

**Antigen Distribution:** PDGFR $\alpha$  is expressed on platelets, megakaryocytes, fibroblasts, pericytes, vascular smooth muscle cells, neurons, and myoblasts. Malignant cells from several types of cancer (ovary, prostate, breast, lung, brain, skin, bone, gastrointestinal, kidney) can also express PDGFR $\alpha$ .

**Immunogen:** Human PDGFRA

**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:** Olaratumab activity is directed against human PDGFR $\alpha$ . This non-therapeutic biosimilar antibody uses the same variable region sequence as the therapeutic antibody Olaratumab. This product is for research use only.

**Product Preparation:** Recombinant biosimilar antibodies are manufactured in an animal free facility using only in vitro protein 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.