Anti-Human CD25 (IL-2R) (Daclizumab)

IVMB0405

Product Information

Product SKU:	IVMB0405	**Clone**:	Hu102	**Target**:	CD25
Size:	1 mg, 25 mg, 5 mg, 50 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:

Interleukin-2 receptor (IL-2R), which regulates normal immune function [1] and is involved in signal transduction, cell growth and survival [2] , is composed of CD25, CD122, and CD132 [3] . CD25 is the alpha-chain of IL-2R [2] and its expression is upregulated in resting T cells after activation, which in turn increases the binding capacity of IL-2 and positively affects signaling for T cell proliferation and survival [4].

Daclizumab prevents the formation of the heterotrimeric IL-2R and selectively blocks IL-2R-mediated signaling [3] . By masking the IL-2 binding site on IL-2R, daclizumab inhibits T cell activation and proliferation as well as prevents IL-2 from stimulating Tregs to induce apoptosis in effector T cells [4]. Additionally, daclizumab can remove CD25 from the surfaces of T cells via monocyte-dependent trogocytosis (defined as the active transfer of plasma membrane fragments between two live cells triggered by interaction between a cognate antigen on one cell and an antigen receptor signaling pathway on another cell) [3] . Daclizumab also inhibits activation and proliferation of T cells by blocking dendritic cells from presenting IL-2 to resting T cells [4] . Daclizumab reduces T cell CD25 levels via a mechanism that requires Fc domain interaction with FcR on monocytes, but not on natural killer cells [3] .

Blocking IL-2 from binding to T cells leads to increased binding to CD56 ^{bright} NK cells via the IL-2R beta subunit [4] . This then leads to an expansion of CD56 ^{bright} NK cells, which target

and kill activated T cells and is associated with reduced inflammation in the brain and decreased atrophy of brain tissue.

Daclizumab is humanized anti-Tac [5], [6] and is composed of two humanized gamma-1 heavy chains and two humanized kappa light chains [4] that are sequence optimized for high affinity[5], [6] . Daclizumab has been used in the treatment or prevention of a variety of autoimmune disorders and renal allograft rejection, respectively [6].

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

Applications: ELISA

Synonyms: IL2RA, IL2R, p55, TAC

Antigen Distribution: CD25 is constitutively expressed at high levels on CD4+CD25+FoxP3+ regulatory T cells and at low levels on resting T cells. CD25 is expressed by approximately 30% of human peripheral blood B cells, particularly those belonging to the memory B cell population. Additionally, CD25 is expressed on the cell surface of many lymphomas and is increased within serum and the central nervous system of patients with multiple sclerosis.

Immunogen: Humanized antibody derived from mouse clone that binds to Human CD25.

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: Daclizumab activity is directed against the Tac epitope of CD25.

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.