

## IVMB0403

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### Product Information

<b>Product SKU:</b> IVMB0403	<b>Clone:</b> Hu5F9-G4	<b>Target:</b> CD47
<b>Size:</b> 100 mg, 50 mg, 25 mg, 5.0 mg, 1.0 mg		<b>Isotype:</b> Human IgG4k

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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:** In healthy cells, signal molecules stimulate programmed cell removal via various proteins, phospholipids, and abnormal glycosylation<sup>1</sup>. However, cancer cells are able to evade phagocytic elimination, the normal method of cell removal by the innate immune system<sup>1</sup>, due to the inhibitory antiphagocytic “don’t eat me” signal generated by CD47<sup>2</sup>. The CD47 signal, which is overexpressed on cancer cells<sup>3</sup>, enables immune evasion from macrophages and other phagocytes<sup>2</sup>. Since CD47 overexpression has been found on all known solid tumors and leukemias, it is a universal blocking target for cancer immunotherapy<sup>1</sup>.

Magrolimab was generated by immunizing Balb/c mice with a recombinant human-mouse CD47/mFc fusion protein composed of a cDNA fragment of human CD47 encoding the extracellular domain fused to mouse Fc<sup>1</sup>. Hybridomas were created by fusing spleen cells with SP2/0 cells, and screening resulted in clone 5F9. Humanization of mouse anti-CD47 5F9 was performed by CDR grafting onto a human IgG4 scaffold to minimize recruitment of antibody Fc-dependent effector functions. Magrolimab does not induce antibody-dependent cellular cytotoxicity, complement-dependent cytotoxicity, or apoptosis. Additionally, residue optimization was performed and the human IgG4 heavy chain constant region was modified by a Ser228Pro substitution to reduce the rate of Fab arm exchange, which can occur in human IgG4 molecules.

Magrolimab blocks the interaction between CD47 and one of its ligands, signal regulatory protein alpha (SIRP $\alpha$ )<sup>1</sup>. As a result, magrolimab is able to induce potent macrophage-mediated phagocytosis of primary human acute myeloid leukemia cells<sup>1</sup>, HER2+ breast cancer cells<sup>4</sup>, and lymphoma cells<sup>5</sup>, either on its own or in combination with other antibodies.

<b>Endotoxin Level:</b>	< 1.0 EU/mg as determined by the LAL method
<b>Applications:</b>	ELISA
<b>Synonyms:</b>	IAP, Neutrophilin, gp42
<b>Antigen Distribution:</b>	CD47 is a cell-surface protein with ubiquitous expression that is also overexpressed on cancer cells.
<b>Immunogen:</b>	Humanized antibody derived from mouse clone 5F9
<b>Formulation:</b>	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.
<b>Specificity:</b>	Magrolimab activity is directed against CD47.
<b>Product Preparation:</b>	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.
<b>Storage &amp; Handling:</b>	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.