

## IVMB0518

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### Product Information

<b>Product SKU:</b> IVMB0518	<b>Clone:</b> ABX-EGF	<b>Target:</b> EGFR
<b>Size:</b> 500 µg		<b>Isotype:</b> Human IgG2k

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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:** Epidermal growth factor receptor (EGFR, also known as ErbB1 or HER-1) belongs to the receptor tyrosine kinase superfamily and is a transmembrane glycoprotein that activates various signaling pathways fundamental to cellular proliferation, differentiation, and survival<sup>1, 2</sup>. EGFR plays important roles during embryogenesis, organogenesis, and in the growth, differentiation, maintenance, and repair of adult tissues<sup>2</sup>. EGFR is also a host factor that facilitates viral entry for hepatitis B<sup>4</sup>, hepatitis C<sup>5</sup>, and gastroenteritis<sup>6</sup> and plays a role in SARS-CoV-2 infection<sup>7, 8, 9</sup>.

Dysregulation, somatic mutation, and/or altered signaling of EGFR is associated with neurological diseases (e.g. Parkinson's<sup>2</sup>, Alzheimer's<sup>1, 2</sup>, and amyotrophic lateral sclerosis<sup>2</sup>) and multiple cancers (lung, glioblastoma, brain, breast, colorectal, ovarian)<sup>10</sup>. Additionally, in cancer, binding of ligands to EGFR is associated with aberrant cell proliferation, invasion, metastasis, angiogenesis, and decreased apoptosis<sup>11</sup>. As such, EGFR is the target of multiple cancer therapies, including monoclonal humanized antibodies, such as panitumumab, as well as selective small molecule inhibitors.

Panitumumab was generated in a XenoMouse IgG2 strain immunized with the human cervical epidermal carcinoma cell line A431<sup>12</sup>. Panitumumab binds specifically to EGFR and inhibits the growth and survival of selected human tumor cell lines over-expressing EGFR *in vitro* and *in vivo*<sup>13</sup>. Panitumumab binds EGFR with high affinity, blocking the binding of both

EGF and TGF- $\alpha$ , and preventing EGF-activated EGFR tyrosine autophosphorylation and downstream activation of receptor-associated kinases<sup>12</sup>. Panitumumab inhibits cell growth, tumor cell activation, in vitro tumor cell proliferation<sup>12</sup>, and metastasis<sup>13</sup>. Panitumumab also induces apoptosis and decreases proinflammatory cytokine and vascular growth factor production<sup>13</sup>. Additionally, upon binding, panitumumab causes EGFR internalization in tumor cells<sup>12</sup>.

Panitumumab was approved in the United States for the treatment of some patients with EGFR-expressing metastatic colorectal cancer<sup>14, 15</sup>.

<b>Endotoxin Level:</b>	< 1.0 EU/mg as determined by the LAL method
<b>Applications:</b>	ELISA
<b>Synonyms:</b>	Epidermal growth factor receptor, ErbB1, Anti-Human EGFR, ABX-EGF
<b>Antigen Distribution:</b>	EGFR is overexpressed on the cell surfaces of various tumor cell types and is also found in the plasma membranes, cytoplasm, and cell junctions of many healthy tissues, including those associated with the Skin – Epidermis development cluster of The Human Protein Atlas. EGFR is also found in the blood secretome.
<b>Immunogen:</b>	Human EGFR/ErbB1
<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>	This non-therapeutic biosimilar antibody uses the same variable region sequence as the therapeutic antibody Panitumumab. This product is for research use only. Panitumumab activity is directed against Human EGFR.
<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.