# Human GM-CSF Rα Antibody

Monoclonal Mouse $IgG_{2B}$ Clone # 1064818

Catalog Number: MAB7062

## DESCRIPTION

| | |
|---|---|
| **Species Reactivity** | Human |
| **Specificity** | Detects human GM-CSF in direct ELISA. |
| **Source** | Monoclonal Mouse $IgG_{2B}$ Clone # 1064818 |
| **Purification** | Protein A or G purified from hybridoma culture supernatant |
| **Immunogen** | Mouse myeloma cell line NS0-derived recombinant human GM-CSF Ralpha<br>Met1-Gly320<br>Accession # P15509 |
| **Formulation** | Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. |

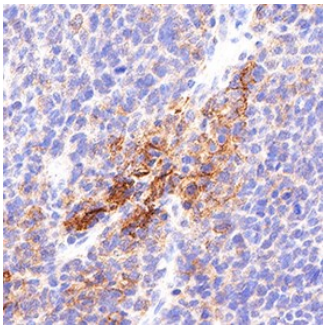
## APPLICATIONS

**Please Note:** *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

| | Recommended Concentration | Sample |
|---|---|---|
| **Western Blot** | 2 µg/mL | JAR human choriocarcinoma cells |
| **Immunohistochemistry** | 5-15 µg/mL | Immersion fixed paraffin-embedded sections of Melanoma |

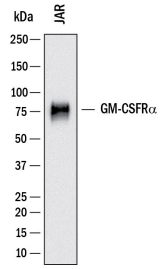
## DATA

### Immunohistochemistry



**Detection of GM-CSF Rα in Melanoma.** GM-CSF Rα was detected in immersion fixed paraffin-embedded sections of Melanoma using Mouse Anti-Human GM-CSF Rα Monoclonal Antibody (Catalog # MAB7062) at 5 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cell surface in cancer cells. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

### Western Blot




**Detection of Human GM-CSF Rα by Western Blot.** Western blot shows lysates of JAR human choriocarcinoma cells. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human GM-CSF Rα Monoclonal Antibody (Catalog # MAB7062) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for GM-CSF Rα at approximately 80 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

## PREPARATION AND STORAGE

| | |
|---|---|
| **Reconstitution** | Reconstitute at 0.5 mg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 6 months, -20 to -70 °C under sterile conditions after reconstitution. |



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## BACKGROUND

Granulocyte macrophage colony stimulating factor receptor alpha (GM-CSF Rα), also known as CD116, is a component of the receptor complex that mediates cellular responses to GM-CSF. GM-CSF promotes the differentiation and mobilization of granulocyte-macrophage, erythroid, megakaryocyte, and eosinophil progenitors. It enhances the activation of myeloid cell effector functions and plays a role in the development of Th1 biased immune responses, allergic inflammation, and autoimmunity (1-4). Mature human GM-CSF Rα is an 80 kDa type I transmembrane glycoprotein that consists of a 298 amino acid (aa) extracellular domain (ECD) with two fibronectin type III domains and a juxtamembrane WSxWS motif, a 26 aa transmembrane segment, and a 54 aa cytoplasmic domain (5). Within the ECD, human GM-CSF Rα shares approximately 33% aa sequence identity with mouse and rat GM-CSF Rα. Alternative splicing of human GM-CSF Rα generates several additional isoforms that lack the cytoplasmic and/or transmembrane regions. Soluble forms of the receptor retain the ability to bind GM-CSF (6, 7). GM-CSF Rα is expressed on hematopoietic stem cells, progenitor and differentiated cells in the myeloid lineage, vascular endothelial cells, placenta, and non-hematopoietic solid tumor cells (8). GM-CSF Rα associates with the common beta chain/CD131 ($\beta_c$), a 135 kDa transmembrane protein that is also the signal transducing component of the receptors for IL-3 and IL-5 (9, 10). Association with $\beta_c$ converts GM-CSF Rα from a low affinity to a high affinity receptor for GM-CSF (9-11). The shared usage of $\beta_c$ underlies the synergism between GM-CSF, IL-3, and IL-5 in their effects on myeloid cell differentiation and activation (1, 2).

**References:**

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