

DESCRIPTION

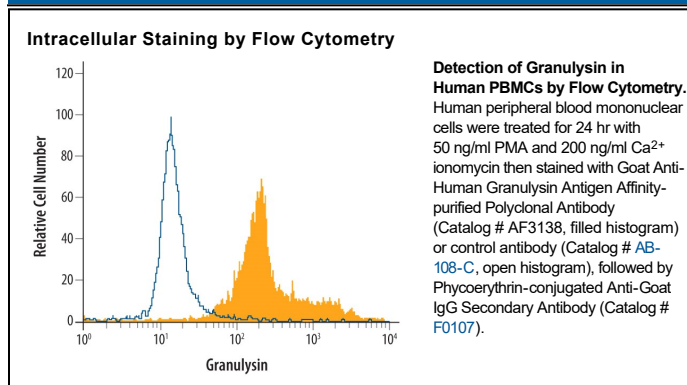
Species Reactivity	Human
Specificity	Detects human Granulysin in direct ELISAs and Western blots. In direct ELISAs and Western blots, less than 1% cross-reactivity with recombinant human NKG-2D is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Granulysin Arg23-Leu145 Accession # P22749
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

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	0.1 µg/mL	Recombinant Human Granulysin (Catalog # 3138-GN/CF)
Intracellular Staining by Flow Cytometry	2.5 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Granulysin (formerly NKG5 or Lymphokine LAG-2) is a member of the saposin-like protein (SAPLIP) family of membrane disrupting proteins (1). Granulysin is expressed in granules of natural killer and activated cytotoxic T cells. It exhibits cytolytic activity against intracellular or extracellular microbes and also tumors, either alone or in synergy with perforin (2). Human granulysin has structural similarity and 30 - 40% aa identity to granulysins and NK-lysins of other mammals such as bovine, porcine and canine; similar peptides in rodents have not been identified (1). The 15 kDa unglycosylated protein contains five helical domains; helix 2 and 3 contain 9 arginines and one cysteine critical for activity. Peptides of either helix 2 or 3 will lyse bacteria, while helix 3 is needed to lyse tumor targets (3, 4). One isoform designated 519 uses a different start codon, has no signal peptide sequence and is poorly expressed (5). A post-translationally processed 9 kDa form is present in acidified granules and is less lytic than the 15 kDa form at granule pH (6). IL-15 is necessary and sufficient for granulysin upregulation in CD8 T cells (2). Nanomolar granulysin promotes chemotaxis and increases production of chemokines by monocytic cells, while micromolar local concentrations are needed for lysis (7). Experimental evidence supports the following mechanism for activity against intracellular pathogens (8). First, granulysin forms clusters in lipid rafts due to interaction of positive charges in helices 2-3 with acidic sphingolipids. After endocytosis, early endosomes fuse with phagosomes, probably regulated by small GTPase rab5. Granulysin binds microbial membranes through charge interactions and disrupts them, probably via scissoring actions of granulysin molecules (9, 10).

References:

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