

DESCRIPTION	
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects the conventional form of human UNC13D in Western blots.
<b>Source</b>	Recombinant Monoclonal Rabbit IgG Clone # 1223A
<b>Purification</b>	Protein A or G purified from cell culture supernatant
<b>Immunogen</b>	KLH-coupled N-terminal human UNC13D peptide Accession # Q70J99
<b>Formulation</b>	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
<b>Western Blot</b>	0.1 µg/mL	See Below
<b>Immunocytochemistry</b>	5-25 µg/mL	See Below
<b>Simple Western</b>	1 µg/mL	See Below

**DATA**

**Western Blot**

**Detection of Human UNC13D by Western Blot.** Western blot shows lysates of NK-92 human natural killer lymphoma cell line, MOLT-4 human acute lymphoblastic leukemia cell line, and Ramos human Burkitt's lymphoma cell line. PVDF membrane was probed with 0.1 µg/mL of Rabbit Anti-Human UNC13D Monoclonal Antibody (Catalog # MAB89661) followed by HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # HAF008). A specific band was detected for UNC13D at approximately 110 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

**Immunocytochemistry**

**UNC13D in NK-92 Human Cell Line.** UNC13D was detected in immersion fixed NK-92 human natural killer lymphoma cell line using Rabbit Anti-Human UNC13D Monoclonal Antibody (Catalog # MAB89661) at 5 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Rabbit IgG Secondary Antibody (red; Catalog # NL004) and counterstained with DAPI (blue). Specific staining was localized to cell surfaces. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

**Simple Western**

**Detection of Human UNC13D by Simple Western™.** Simple Western lane view shows lysates of NK-92 human natural killer lymphoma cell line, loaded at 0.2 mg/mL. A specific band was detected for UNC13D at approximately 112 kDa (as indicated) using 1 µg/mL of Rabbit Anti-Human UNC13D Monoclonal Antibody (Catalog # MAB89661). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

#### BACKGROUND

UNC13D (also Munc13-4) is a 123 kDa cytoplasmic and peripheral membrane protein that is expressed at highest levels in hematopoietic tissues. UNC13D appears to play a role in vesicle maturation during exocytosis and its expression is obligatory for exocytosis of cytolytic granules from NK and T cells. A point mutation in intron 1 of UNC13D causes familial hematosphagocytic lymphohistiocytosis type3, a rare autosomal recessive immune deficiency. The mutation disrupts transcription factor binding and prevents expression of an alternative isoform that is required for lymphocyte cytotoxicity. The conventional and alternative isoforms are identical from amino acids (aa) 40-1090 but have distinct N-terminal segments. Human and mouse have 75% aa sequence identity throughout the region used as the immunogen. It is unknown whether mice express the alternative isoform.