Human Syndecan-1/CD138 Antibody

Monoclonal Rat IgG_1 Clone # 359103

Catalog Number: MAB2780

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Syndecan-1 in direct ELISAs. In direct ELISAs, this antibody shows approximately 60% cross-reactivity with recombinant mouse (rm) Syndecan-1 and no cross-reactivity with recombinant human (rh) Syndecan-2, rhSyndecan-3, or rmSyndecan-4.
Source	Monoclonal Rat IgG_1 Clone # 359103
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Syndecan-1/CD138 Gln18-Glu251 Accession # NP_002988
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 as a 0.2 μm filtered solution in PBS.

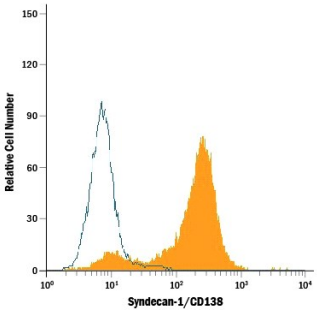
APPLICATIONS

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
Flow Cytometry	0.25 µg/10^6 cells	See Below
Immunocytochemistry	3-25 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

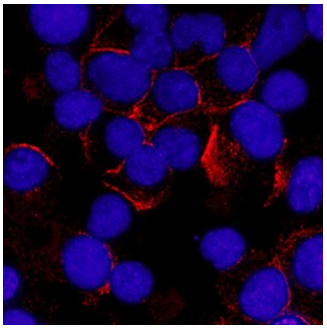
DATA

Flow Cytometry



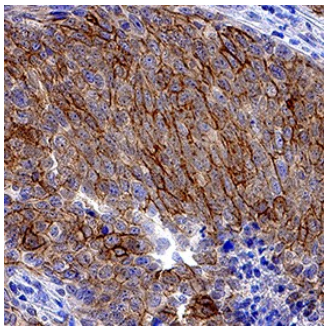
Detection of Syndecan-1/CD138 in RPMI 8226 Human Cell Line by Flow Cytometry. RPMI 8226 human multiple myeloma cell line was stained with Rat Anti-Human Syndecan-1/CD138 Monoclonal Antibody (Catalog # MAB2780, filled histogram) or isotype control antibody (Catalog # MAB005, open histogram), followed by Phycoerythrin-conjugated Anti-Rat IgG Secondary Antibody (Catalog # F0105B).

Immunocytochemistry



Syndecan-1/CD138 in U266 Human Cell Line. Syndecan-1/CD138 was detected in immersion fixed U266 human myeloma cell line using Rat Anti-Human Syndecan-1/CD138 Monoclonal Antibody (Catalog # MAB2780) at 3 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Rat IgG Secondary Antibody (red; Catalog # NL013) and counterstained with DAPI (blue). Specific staining was localized to plasma membrane. View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

Immunohistochemistry



Syndecan-1/CD138 in Human Cervical Cancer Tissue. Syndecan-1/CD138 was detected in immersion fixed paraffin-embedded sections of human cervical cancer tissue using Rat Anti-Human Syndecan-1/CD138 Monoclonal Antibody (Catalog # MAB2780) at 1.7 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Rat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS017) and counterstained with hematoxylin (blue). Specific staining was localized to plasma membrane. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

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. *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.** ● 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.

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BACKGROUND

Syndecan-1, designated CD138, is a dimeric type I transmembrane (TM) protein that belongs to the syndecan family of Type 1 transmembrane proteins (1, 2). The four syndecan family members are major carriers of heparan sulfate (HS) and chondroitin sulfate glycosaminoglycans (GAGs) that have different expression patterns and extracellular sequences. Syndecan-1 forms weak non-covalent homodimers, or heterodimers with Syndecan-2 or -3, through interactions of the transmembrane domain (3). It is synthesized as a 310 amino acid (aa) precursor with a 17 aa signal sequence, a 234 aa extracellular domain (ECD) that includes three closely-spaced consensus Ser-Gly HS attachment sites near the N-terminus, a 25 aa TM segment, and a 34 aa cytoplasmic region that includes a PDZ binding motif with a tyrosine phosphorylation site. The ECD is variably modified by GAGs, producing molecular weights of 120-200 kDa for native Syndecan-1. Soluble forms are shed via proteolytic cleavage. Human Syndecan-1 ECD shares 65-71% aa identity with the ECD of rat, mouse, canine, equine and bovine Syndecan-1. Syndecan-1 shows highest expression on epithelial cells such as keratinocytes, and terminally differentiated B cells such as plasma cells (4, 5). It aids wound healing in skin, cornea, and heart following myocardial infarction by promoting re-epithelialization, migration, and collagen deposition (4-8). It binds chemokines, creating chemotactic gradients when shed, but also binds and modulates integrins to control the influx of leukocytes (5, 7, 9). The net effect is to allow, but limit, inflammation. In myeloma and other cancers, shedding of Syndecan-1 can facilitate growth, angiogenesis and metastasis (10-12). Growth factors, such as FGFs and HGF, bind GAG chains and use Syndecan-1 as a coreceptor (12, 13). The GAG chains may also be used by a variety of viruses and bacteria for cell adhesion and uptake (4).

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