

## DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse Syndecan-1/CD138 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human Syndecan-1, recombinant mouse (rm) Syndecan-3 or rmSyndecan-4 is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>1</sub> Clone # 300506
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse Syndecan-1/CD138 isoform 1 Gln18-Glu252 Accession # P18828
<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.

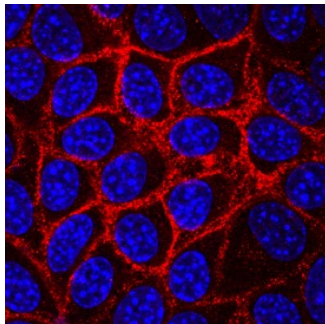
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Flow Cytometry</b>	0.25 µg/10 <sup>6</sup> cells	T1165 mouse plasmacytoma cell line
<b>Immunocytochemistry</b>	8-25 µg/mL	See Below
<b>CyTOF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

## DATA

### Immunocytochemistry



**Syndecan-1/CD138 in NMuMG Mouse Cell Line.** Syndecan-1/CD138 was detected in immersion fixed NMuMG mouse mammary gland epithelial cell line using Rat Anti-Mouse Syndecan-1/CD138 Monoclonal Antibody (Catalog # MAB2966) at 10 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 cell surfaces. View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

## 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>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <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**

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 22 aa signal sequence, a 233 aa extracellular domain (ECD) that includes three closely spaced consensus Ser-Gly HS attachment sites near the N-terminus, a 21 aa TM segment, and a 35 aa cytoplasmic region that includes a PDZ binding motif with a tyrosine phosphorylation site (4). 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. Mouse Syndecan-1 ECD shares 70% and 87% aa identity with the ECD of human and rat Syndecan-1, respectively. Alternative splicing in mouse generates an isoform with an internal deletion of 44 aa from the ECD (5). Syndecan-1 shows highest expression on epithelial cells such as keratinocytes, and terminally differentiated B cells such as plasma cells (6, 7). It aids wound healing in skin, cornea, and heart following myocardial infarction by promoting re-epithelialization, migration, and collagen deposition (6-10). It binds chemokines, creating chemotactic gradients when shed, but also binds and modulates integrins to control the influx of leukocytes (7, 9, 11). The net effect is to allow, but limit, inflammation. In myeloma and other cancers, shedding of Syndecan-1 can facilitate growth, angiogenesis and metastasis (12-14). Growth factors, such as FGFs and HGF, bind GAG chains and use Syndecan-1 as a coreceptor (14, 15). The GAG chains may also be used by a variety of viruses and bacteria for cell adhesion and uptake (6).

**References:**

1. Tkachenko, E. *et al.* (2005) *Circ. Res.* **96**:488.
2. Mali, M. *et al.* (1990) *J. Biol. Chem.* **265**:6884.
3. Dews, I.C. and K.R. MacKenzie (2007) *Proc. Natl. Acad. Sci. USA* **104**:20782.
4. Saunders, S. *et al.* (1989) *J. Cell Biol.* **108**:1547.
5. Romaris, M. *et al.* (1999) *J. Biol. Chem.* **274**:18667.
6. Fears, C.Y. and A. Woods (2006) *Matrix Biol.* **25**:443.
7. Stepp, M.A. *et al.* (2002) *J. Cell Sci.* **115**:4517.
8. Ojeh, N. *et al.* (2008) *J. Invest. Dermatol.* **128**:26.
9. Stepp, M.A. *et al.* (2007) *J. Cell Sci.* **120**:2851.
10. Vanhoutte, D. *et al.* (2007) *Circulation* **115**:475.
11. Li, Q. *et al.* (2002) *Cell* **111**:635.
12. Beauvais, D.M. *et al.* (2009) *J. Exp. Med.* **206**:691.
13. Yang, Y. *et al.* (2007) *J. Biol. Chem.* **282**:13326.
14. Derksen, P.W.B. *et al.* (2002) *Blood* **99**:1405.
15. Su, G. *et al.* (2007) *J. Biol. Chem.* **282**:14906.