

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Syndecan-1/CD138 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human Syndecan-1, recombinant mouse (rm) Syndecan-2, rmSyndecan-3, or rmSyndecan-4 is observed.
Source	Monoclonal Rat IgG ₁ Clone # 320611
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Syndecan-1/CD138 isoform 1 Gln18-Glu252 (predicted) Accession # P18828
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.

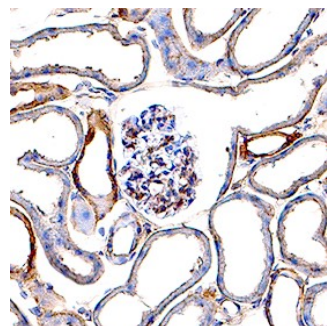
APPLICATIONS

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	1 µg/mL	Recombinant Mouse Syndecan-1/CD138 (Catalog # 3190-SD)
Immunohistochemistry	1-25 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Mouse Syndecan-1/CD138 (Catalog # 3190-SD), see our available Western blot detection antibodies

DATA

Immunohistochemistry



Syndecan-1/CD138 in Mouse Kidney.
Syndecan-1/CD138 was detected in perfusion fixed frozen sections of mouse kidney using Rat Anti-Mouse Syndecan-1/CD138 Monoclonal Antibody (Catalog # MAB29661) at 1.7 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to glomeruli and convoluted tubules. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

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. <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

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.