ADVANCED TARGETING SYSTEMS

10451 ROSELLE STREET, #300, SAN DIEGO, CA 92121
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Antibody to Human Heparanase 1 (HPA1), Clone HP130

MOUSE MONOCLONAL

Catalog Number:	AB-476
Quantity:	850 micrograms
Format:	20 mM Sodium Phosphate, 150 mM NaCl, pH 7.2, containing 0.01% Thimerosal
Host:	Mouse
Isotype:	IgG_{1K}
Immunogen:	65 kDa Heparanase precursor

Background:

Heparanase is an endo-β-D-glucuronidase which degrades heparan sulfate side chains of heparan sulfate proteoglycans (HSPGs) in the extracellular matrix. Heparanase plays an important role in ECM degradation, facilitating the migration and extravasation of tumor cells and inflammatory leukocytes.[1,2,3] Upon degradation, heparanase releases growth factors and cytokines that stimulate cell proliferation and chemotaxis.[4,5]

Heparanase is a heterodimer comprised of a 50 kDa subunit harboring the active site and an 8 kDa subunit. It is produced as a latent 65 kDa precursor and proteolytically processed to its active form.[1,6] Heparanase is highly expressed in myeloid leukocytes (i.e. neutrophils) in platelets and in human placenta. Human heparanase was found to be upregulated in various types of primary tumors, correlating in some cases with increased tumor invasiveness and vascularity and with poor prospective survival.[7,8]

Specificity and Preparation:

Anti-human heparanase 1 (HPA1) is a protein G affinity-purified monoclonal antibody raised against the 65 kDa heparanase precursor. It recognizes the C-terminal region of both the latent pro-heparanase and the active heterodimeric enzyme. In immunoblot analysis, it reacts with the 50 kDa subunit and with the 65 kDa precursor of human heparanase. The antibody cross reacts with chicken heparanase. Each vial contains 850 μg of antibody in 500 μl of 0.22 micron-filtered solution of 20 mM Sodium Phosphate, 150 mM NaCl, pH 7.2, containing 0.01% Thimerosal. Purity is greater than 95% on SDS-PAGE.

Usage and Storage:

Reported to be effective in flow cytometry,[9,10] immunohistochemistry (1:20, 85 μg/ml),[11,12,13,14,15,16,20] western blot (1:200, 8.5 μg/ml),[7,11,12,17,19,21] immunoprecipitation.[18] Working dilutions must be determined by end user.

Store at 4°C for six months. For extended storage, freeze in working aliquots at -20°C. Avoid repeated freezing and thawing.

Store the antibody at -20°C for one year. Avoid repeated freezing and thawing. Gently spin down material before use; 5-10 seconds in a microfuge should be adequate.

References:

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6. Fairbanks *et al*. *J. Biol. Chem* 274:29587– 29590, 1999.
7. Koliopanos *et al*. *Cancer Res* 61:4655–4659, 2001.
8. Gohji *et al*. *Int. J. Cancer* 95:295–301, 2001.
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10. Benhamron *et al*. *J Immunol* 176:6417-6424, 2006.
11. Nadav *et al*. *J Cell Science* 115:2179-2187, 2002.
12. Li *et al*. *Proc Natl Acad Sci* 3(102):6473-6477, 2005.
13. Goldshmidt *et al*. *J Pathol* 203:594–602, 2004.
14. Gingis-Velitski *et al*. *J Biol Chem* 279(42):44084-44092, 2004.

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15. Goldshmidt *et al*. *Exp Cell Res* 281:50–62, 2002.
16. Goldshmidt *et al*. *J Biol Chem* 276:29178-29187, 2001.
17. Xiao *et al*. *Hepatology Res* 26:192-198, 2003.
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21. Beckhove *et al*. *Clin Cancer Res* 11(08):2899-2906, 2005.

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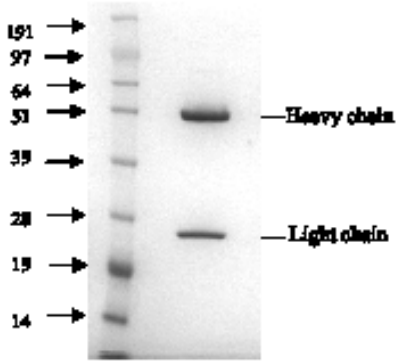
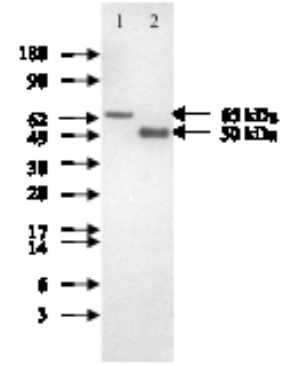


Reduced LDS-PAGE of Mab HP130
Monoclonal anti-human Heparanase-1 (HPA1) antibody clone HP130 (4 µg) was separated on a 12% bis-Tris SDS-polyacrylamide gel electrophoresis (NuPage, Invitrogen) followed by GelCode Blue® (Pierce) staining. Sample was prepared with DTT (reducing conditions). Arrows indicate the position of heavy and light chain bands.



Immunoblot analysis using Mab HP130
Purified 65 kDa precursor Heparanase (50 ng; lane 1) and purified 50 kDa Heparanase subunit (50 ng; lane 2) were loaded onto 4-12% SDS-PAGE. The proteins were transferred to PVDF membrane and subjected to Western blot analysis using HP130. The 65 kDa precursor and the 50 kDa subunits are clearly detected.

Anti-Heparanase antibodies and their uses, including Mab HP130 and its uses, are protected by US. Patents No. 6,177,545; 6,531,129, additional US patent applications and patents and patent applications worldwide.