

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human HAPLN1 in direct ELISAs and Western blots. In these formats, this antibody shows approximately 5% cross-reactivity with recombinant human HAPLN4.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human HAPLN1 (R&D Systems, Catalog # 2608-HP) Asp16-Asn354 Accession # P10915
Endotoxin Level	<0.1 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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	0.1 µg/mL	Recombinant Human HAPLN1 (Catalog # 2608-HP)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

BACKGROUND

HAPLN1 (also known as link protein and CRTLN1) is a member of the hyaladherin family of hyaluronic acid (HA) binding proteins. Hyaluronan binding proteins are of two types; those with link modules, and those without. Link modules are 100 amino acid (aa) HA and protein-binding sequences that contain two α -helices and two antiparallel β -sheets (1, 3). There are three categories of link module-containing proteins. "A" domain-type proteins contain one link module; "B" domain-type proteins contain one link module with an N- and C-terminal flanking region; and "C" domain-type proteins have an extended structure with one N-terminal V-type Ig-like domain followed by two link modules (2). The HAPLN family is a group of four C domain-type proteins that share approximately 50% aa identity (4). HAPLN1 is synthesized as a 354 aa precursor that contains a 15 aa signal sequence and a 339 aa mature region (4 - 6). It contains one Ig-like domain and two 95 aa link modules (6). It is variably glycosylated with a native molecular weight between 41 - 48 kDa (7, 8). Mature human HAPLN1 is 97%, 96%, 96%, 96%, and 96% aa identical to equine, porcine, rat, mouse and bovine HAPLN1, respectively. HAPLN1 contributes to extracellular matrix stability and flexibility (9). In cartilage, HAPLN1 forms a ternary complex with HA and aggrecan. This creates a gel-like substance with remarkable resistance to deformation (3). In this complex, HA forms a linear backbone with perpendicularly attached aggrecan and HAPLN1. Aggrecan and HAPLN1 lie parallel to each other, while HA runs between the two HAPLN1 link modules (2, 3, 10). The Ig domain of HAPLN1 binds to aggrecan, while the two link modules of HAPLN1 bind to HA. Although HA and aggrecan will associate, the tendency is towards dissociation (2, 3, 8). HAPLN1 provides a stabilizing influence on HA-aggrecan associations, thus creating a long-lived ternary functional complex.

References:

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