Recombinant Human Brevican

Catalog Number: 4009-BC

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human Brevican protein Asp23-Pro911, with a C-terminal 6-His tag Accession # AAH09117
N-terminal Sequence Analysis	Asp23
Structure / Form	Monomer
Predicted Molecular Mass	97.7 kDa

SPECIFICATIONS

SDS-PAGE	130-160 kDa, reducing conditions
Activity	Measured by its ability to bind biotinylated hyaluronan in a functional ELISA with an estimated K_d <3 nM.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>85%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS and EDTA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in sterile deionized water.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Brevican, also called BEHAB, is a secreted member of the the lectican family of proteoglycans that share a common domain structure (1). Brevican contains an Ig-like V-set domain, two link domains, a Glu-rich region, a central region with glycosaminoglycan (GAG) modifications, an EGF-like domain, a C-type lectin domain, and a C-terminal Sushi/CRP-like domain (2). Brevican is restricted to the CNS and is expressed by astrocytes, oligodendrocytes, and neurons (3-7). A GPI-anchored alternate splice form exists that is truncated following the central (GAG) region (2, 8). Brevican is cleaved by multiple proteases and exists in a number of distinct fragments (5, 9, 10). Full-length brevican consists of a 97 kDa core protein with up to approximately 100 kDa of attached chondroitin sulfate but not heparan sulfate chains (4, 7, 11, 12). Brevican associates with the extracellular matrix, perineuronal nets, and astrocyte cell surfaces by means of its chondroitin sulfate, GPI anchor, hyaluronic acid-binding link domains, and the core protein (4, 7, 8, 13). The secreted isoform is dominant during brain development and is up-regulated in astrocytes following brain injury (2, 14). In human and rat, an under-glycosylated form of brevican is up-regulated in highly aggressive glioma but not in low-grade glioma or other brain pathologies (15, 16). In mouse and rat, levels of an ADAMTS4-generated 55 kDa N-terminal fragment increase during remodeling after excitotoxic injury (11, 12). Human brevican shares 90%, 80%, and 80% aa sequence identity with bovine, mouse, and rat brevican, respectively. Within the Ig-like and two link domains, brevican shares 45%-51% aa sequence identity with aggrecan, neurocan, and versican.

References:

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