

DESCRIPTION

Species Reactivity	Human/Rat
Specificity	Detects human Brevican in direct ELISAs and Western blots. In direct ELISAs, approximately 50% cross-reactivity with recombinant mouse Brevican is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Brevican Asp23-Pro911 Accession # AAH27971
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 as a 0.2 µm filtered solution in PBS.

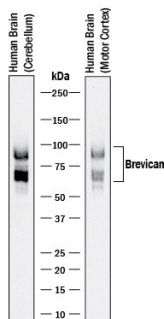
APPLICATIONS

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	0.1 µg/mL	See Below
Immunocytochemistry	5-15 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human Brevican (Catalog # 4009-BC), see our available Western blot detection antibodies

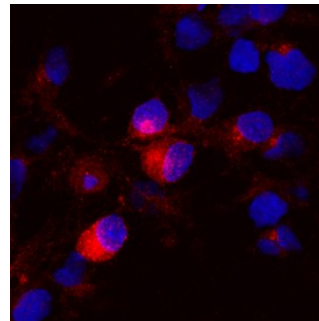
DATA

Western Blot



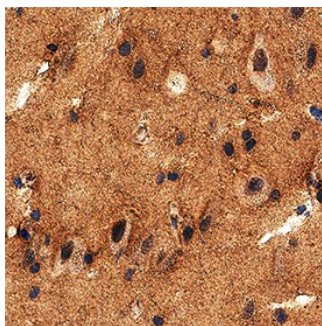
Detection of Human Brevican by Western Blot. Western blot shows lysates of human brain (cerebellum) tissue and human brain (motor cortex) tissue. PVDF membrane was probed with 0.1 µg/mL of Sheep Anti-Human/Rat Brevican Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4009) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). Specific bands were detected for Brevican at approximately 60 and 90 kDa (as indicated). This experiment was conducted under reducing conditions and using [Immunoblot Buffer Group 1](#).

Immunocytochemistry



Brevican in Rat Cortical Stem Cells. Brevican was detected in immersion fixed rat cortical stem cells differentiated for 7 days by growth factor withdrawal using Sheep Anti-Human/Rat Brevican Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4009) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Sheep IgG Secondary Antibody (red; Catalog # NL010) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Stem Cells on Coverslips](#).

Immunohistochemistry



Brevican in Human Brain. Brevican was detected in immersion fixed paraffin-embedded sections of human brain (cortex) using Sheep Anti-Human/Rat Brevican Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4009) at 5 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Sheep HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS019) and counterstained with hematoxylin (blue). Specific staining was localized to neuropil. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

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. *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

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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