

#### DESCRIPTION

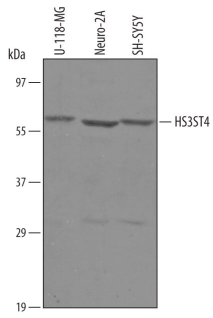
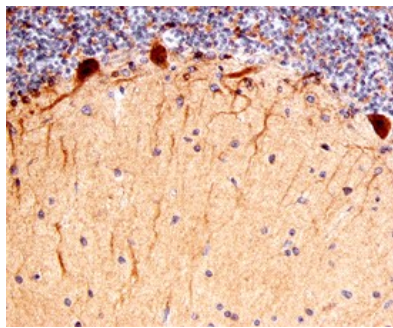
<b>Species Reactivity</b>	Human/Mouse
<b>Specificity</b>	Detects human and mouse Heparan Sulfate 3-O-Sulfotransferase4/HS3ST4 in direct ELISAs and Western blots.
<b>Source</b>	Polyclonal Sheep IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human Heparan Sulfate 3-O-Sulfotransferase4/HS3ST4 Gly184-Lys456 Accession # Q9Y661
<b>Formulation</b>	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
<b>Western Blot</b>	1 µg/mL	See Below
<b>Immunohistochemistry</b>	5-15 µg/mL	See Below
<b>Neutralization</b>	Measured by its ability to neutralize Recombinant Human Heparan Sulfate 3-O-Sulfotransferase 4/HS3ST4 (4.17 µg/mL, Catalog # 6085-ST) transfer from the sulfate donor Adenosine 3'-phosphate 5'-phosphosulfate (PAPS, 33 µM) to Heparan Sulfate (0.5 mM). The Neutralization Dose (ND <sub>50</sub> ) is typically 28 µg/mL.	

#### DATA

<p><b>Western Blot</b></p>  <p><b>Detection of Human Sulfate 3-O-Sulfotransferase 4/HS3ST4 by Western Blot.</b> Western blot shows lysates of U-118-MG human glioblastoma/astrocytoma cell line, Neuro-2A mouse neuroblastoma cell line, and SH-SY5Y human neuroblastoma cell line. PVDF Membrane was probed with 1 µg/mL of Sheep Anti-Human Sulfate 3-O-Sulfotransferase 4/HS3ST4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF6085) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for Sulfate 3-O-Sulfotransferase 4/HS3ST4 at approximately 58 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.</p>	<p><b>Immunohistochemistry</b></p>  <p><b>Heparan Sulfate 3-O-Sulfotransferase 4/HS3ST4 in Human Brain.</b> Heparan Sulfate 3-O-Sulfotransferase 4/HS3ST4 was detected in immersion fixed paraffin-embedded sections of human brain (cerebellum) using Sheep Anti-Human/Mouse Heparan Sulfate 3-O-Sulfotransferase 4/HS3ST4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF6085) at 3 µg/mL overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using the Anti-Sheep HRP-DAB Cell &amp; Tissue Staining Kit (brown; Catalog # CTS019) and counterstained with hematoxylin (blue). Specific staining was localized to Purkinje neurons. View our protocol for <a href="#">Chromogenic IHC Staining of Paraffin-embedded Tissue Sections</a>.</p>
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#### PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Heparan Sulfate is a highly sulfated polysaccharide that can be found on the cell surface and within the extracellular matrix. It is typically covalently attached to the protein core of proteoglycans, such as syndecans and glypicans. Heparin, on the other hand, can be considered as a highly sulfated version of Heparan Sulfate that is predominantly found in mast cells. Both heparin and Heparan Sulfate contain disaccharide repeats of uronic acid and N-acetylglucosamine and are modified by the same sulfotransferases (1, 2). The uronic acid residues can be sulfated at the 2-O position by Heparan Sulfate 2-O sulfotransferase (HS2ST). The N-acetylglucosamine residues can be sulfated at the N, 3-O, and 6-O positions by N-deacetylase/N-sulfotransferases (NDSTs), Heparan Sulfate 3-O sulfotransferases (HS3STs) and Heparan Sulfate 6-O sulfotransferases (HS6STs) respectively. There are seven HS3STs in the human genome (3, 4). HS3ST4 and HS3ST2 are brain specific and may participate in HS-dependent neurobiologic events (5). HS3ST4 can generate tetrasulfated Heparan Sulfate disaccharide, the most highly sulfated sugar found in biological samples (6, 7), and may have a role in assisting HSV-1 entry and spread (8). HS3ST4 is a Golgi resident type II membrane protein and has the longest proline rich stem region among all HS3STs (3, 5). The enzyme activity was assayed using an SDS-PAGE based method (9).

**References:**

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