

## DESCRIPTION

<b>Species Reactivity</b>	Human/Mouse/Rat
<b>Specificity</b>	Detects human Relaxin R1 in direct ELISAs and detects human, mouse, and rat Relaxin R1 in Western blots.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 933344
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Chinese hamster ovary cell line CHO-derived recombinant human Relaxin R1 Met1-Ser398 Accession # Q9HBX9
<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 either lyophilized or as a 0.2 µm filtered solution in PBS.

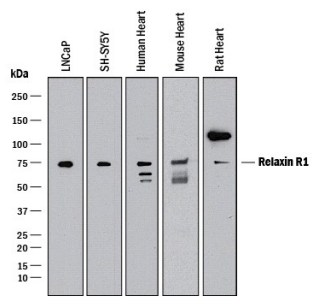
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	2 µg/mL	See Below
<b>Flow Cytometry</b>	0.25 µg/10 <sup>6</sup> cells	See Below
<b>Immunohistochemistry</b>	8-25 µg/mL	See Below
<b>CyTOF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

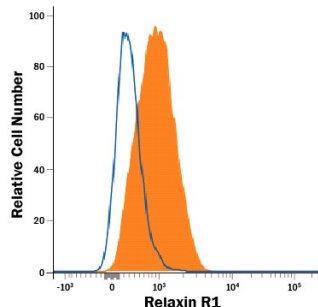
## DATA

**Western Blot**



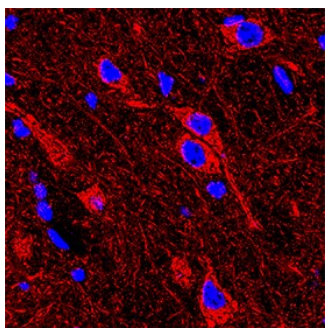
**Detection of Human, Mouse, and Rat Relaxin R1 by Western Blot.** Western blot shows lysates of LNCaP human prostate cancer cell line, SH-SY5Y human neuroblastoma cell line, human heart tissue, mouse heart tissue, and rat heart tissue. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human Relaxin R1 Monoclonal Antibody (Catalog # MAB8898) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for Relaxin R1 at approximately 75 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

**Flow Cytometry**



**Detection of Relaxin R1 in SH-SY5Y Human Cell line by Flow Cytometry.** SH-SY5Y human neuroblastoma cell line was stained with Mouse Anti-Human Relaxin R1 Monoclonal Antibody (Catalog # MAB8898, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B).

**Immunohistochemistry**



**Relaxin R1 in Mouse Brain.** Relaxin R1 was detected in immersion fixed frozen sections of mouse brain (medulla) using Mouse Anti-Human Relaxin R1 Monoclonal Antibody (Catalog # MAB8898) at 2 µg/mL overnight at 4 °C. Tissue was stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to neurons. View our protocol for [Fluorescent IHC Staining of Frozen Tissue Sections](#).

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 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>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <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**

Relaxin R1 (Relaxin Receptor 1), also known as RXFP1 (Relaxin Family Peptide Receptor 1) or LGR7 (Leucine-rich G-protein-coupled Receptor 7) is a member of family C of the LGRs, and is one of four receptors for Relaxin family proteins. Relaxin R1 shows highest affinity for human Relaxins 1, 2 and 3, while RXFP2 binds Relaxin 2 and the related INSL3, and RXFP3 primarily binds Relaxin 3 (1, 2). The 757 amino acid (aa) human Relaxin R1 contains an N-terminal 409 aa extracellular domain (ECD) with a calcium-binding LDL R class A (LDLa) domain and 10 leucine-rich repeats (LRR) with several N-glycosylation sites. The C-terminus contains 12 transmembrane domains within aa 410-672. Human Relaxin R1 (aa 1-398) shares 84, 86, 85, 85 and 91% aa sequence identity with mouse, rat, equine, bovine and porcine Relaxin R1, respectively. Isoforms of 724 and 709 aa lack aa 63-96 and 300-348, respectively, while isoforms of 176, 189, 191 and 337 aa diverge after aa 154, 179, 181 and 324, respectively (3, 4). These forms may dimerize with full-length Relaxin R1 and reduce its expression on the cell surface (3, 4). Receptor activation and cAMP signaling depend on the LDLa domain, and Relaxin binding requires the LRR repeats, with a secondary binding site within transmembrane region exoloops (1, 2, 5). Of LGR family members, RXFP1 and RXFP2 are unique in that they are not internalized to down-regulate signaling, and their LDLa domains allow transmission of both G-protein-dependent and -independent signals (1, 2, 6, 7). Engagement of Relaxin R1 by Relaxin (mainly Relaxin 2 in humans) supports female reproduction by promoting uterine angiogenesis, ovarian follicle ripening, and endometrial, cervical and nipple development (8-10). In male reproduction, Relaxin R1 acts in the prostate to enhance sperm motility (11). It reduces fibrosis in the heart, skin, lungs, liver, kidney, and reproductive tissues by combating aberrant collagen buildup (12). In the vasculature, it mediates vasodilation and decreases blood pressure. Relaxin R1 is expressed on human leukocytes and promotes adhesion, migration, and osteoclast differentiation (13, 14). Additional effects on heart, lungs, kidney and brain are reported, some of which may be species-specific (1).

**References:**

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