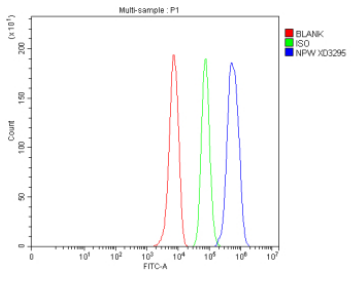
NPW Antibody / Neuropeptide W (FY13053)

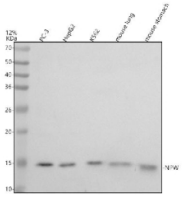
Catalog No.	Formulation	Size
FY13053	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q8N729
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This NPW antibody is available for research use only.



Flow Cytometry analysis of HepG2 cells using anti-NPW antibody. Overlay histogram showing HepG2 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-NPW antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of NPW using anti-NPW antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human PC-3 whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human K562 whole cell lysates, Lane 4: mouse lung tissue lysates, Lane 5: mouse stomach tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-NPW antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A single band is detected at approximately 14 kDa, lower than the predicted 18 kDa for the unprocessed precursor. This apparent size corresponds to the processed prohormone form of NPW following removal of its N-terminal signal peptide and proteolytic maturation into smaller secretory intermediates. Similar migration (~13-15 kDa) has been reported for endogenous NPW in mammalian brain and peripheral tissues.

Description

NPW antibody detects Neuropeptide W, a bioactive peptide involved in energy homeostasis, stress response, and neuroendocrine regulation. The UniProt recommended name is Neuropeptide W (NPW). This neuropeptide exerts its physiological effects by binding to G protein-coupled receptors NPBWR1 and NPBWR2, activating downstream intracellular signaling cascades that regulate feeding, hormone secretion, and cardiovascular activity.

Functionally, NPW antibody identifies a 69-amino-acid precursor protein that is processed into two active peptides, NPW-23 and NPW-30, differing by their C-terminal truncation. These peptides are expressed in specific regions of the hypothalamus, brainstem, and peripheral tissues such as adrenal gland and stomach. NPW acts as an endogenous ligand for NPBWR1/2, coupling primarily to Galphai/o proteins and modulating cyclic AMP levels and calcium flux.

The NPW gene is located on chromosome 17p13.1 and encodes a prepropeptide that undergoes proteolytic processing and amidation to generate mature NPW peptides. In the central nervous system, NPW contributes to the regulation of feeding behavior, energy expenditure, and stress hormone release. It acts synergistically with leptin and insulin pathways to balance energy intake and expenditure. NPW also modulates arousal, locomotion, and nociceptive processing through brainstem circuits.

In peripheral tissues, NPW influences cardiovascular tone, adrenal steroidogenesis, and glucose metabolism. Its expression is regulated by nutritional state and stress exposure, reflecting its role in maintaining physiological equilibrium. In metabolic research, NPW is recognized as a peptide integrating hypothalamic signaling with peripheral energy regulation. Dysregulated NPW expression has been associated with obesity, stress-related disorders, and endocrine dysfunction.

NPW antibody is widely used in neuroendocrinology, metabolism, and behavioral neuroscience research. It is suitable for immunohistochemistry, ELISA, and western blotting to detect NPW peptide distribution in brain and peripheral tissues. This antibody supports studies of neuropeptide signaling, hypothalamic regulation, and energy balance. In translational research, NPW serves as a potential biomarker for metabolic and stress-related conditions.

Structurally, NPW peptides adopt flexible conformations stabilized by amidation and hydrophobic residues, allowing receptor binding with high affinity. NSJ Bioreagents provides NPW antibody reagents validated for use in neuropeptide signaling, hypothalamic regulation, and metabolic research.

Application Notes

Optimal dilution of the NPW antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the N-terminus of human NPW was used as the immunogen for the NPW antibody.

Storage

After reconstitution, the NPW antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.