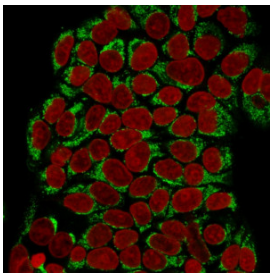
GnRH Receptor Antibody F1G4 / GNRHR Monoclonal Antibody [clone F1G4] (V2544)

Catalog No.	Formulation	Size
V2544-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2544-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2544SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V2544IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

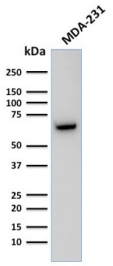
Citations (5)

Bulk quote request

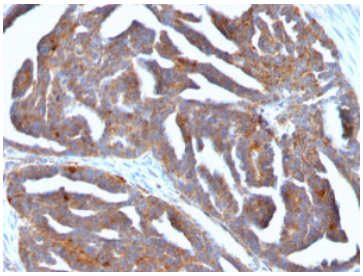
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	F1G4
Purity	Protein G affinity chromatography
UniProt	P30968
Localization	Cytoplasmic
Applications	Flow cytometry: 0.5-1ug/10^6 cells Immunofluorescence: 1-2ug/ml Western blot: 1-2ug/ml Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This GnRH Receptor Antibody F1G4 / GNRHR Monoclonal Antibody is available for research use only.



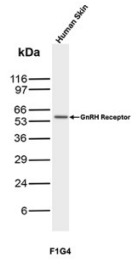
GnRH Receptor Antibody by IF in MCF-7 Cells. Immunofluorescence staining of human MCF-7 breast cancer cells using GnRH Receptor Antibody F1G4, followed by goat anti-mouse IgG conjugated to CF488 (green). RedDot nuclear counterstaining is shown in red. Green immunoreactivity is visible around portions of the cell periphery and within the cytoplasmic regions.



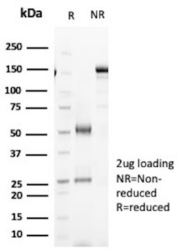
GnRH Receptor Antibody by WB in MDA-MB-231 Cells. Western blot analysis of human MDA-MB-231 breast cancer cell lysate using GnRH Receptor Antibody F1G4. A prominent band is detected at approximately 75 kDa, above the supplier's stated 54-60 kDa molecular weight for GNRHR.



GnRH Receptor Antibody by IHC in Human Ovarian Carcinoma. Immunohistochemical staining of FFPE human ovarian carcinoma tissue using GnRH Receptor Antibody F1G4. Brown immunoreactivity is observed throughout much of the tumor tissue, predominantly involving the cytoplasm of carcinoma cells. Hematoxylin provides blue nuclear counterstaining.



GnRH Receptor Antibody by WB in Human Skin. Western blot analysis of human skin tissue lysate using GnRH Receptor Antibody F1G4. A band is detected at approximately 60 kDa, consistent with the supplier's stated 54-60 kDa molecular weight range for GNRHR.



GnRH Receptor Antibody Purity by SDS-PAGE. SDS-PAGE analysis of purified GnRH Receptor Antibody F1G4 under reducing (R) and non-reducing (NR) conditions, with 2 ug of antibody loaded. The reducing lane shows bands near 50 and 25 kDa, corresponding approximately to immunoglobulin heavy and light chains, while the non-reducing lane contains a prominent higher-molecular-weight band.

Description

GnRH Receptor Antibody F1G4 / GNRHR Monoclonal Antibody recognizes the gonadotropin-releasing hormone receptor, a G protein-coupled receptor encoded by the GNRHR gene. Also known as the gonadoliberin receptor or luteinizing hormone-releasing hormone receptor, GNRHR mediates the effects of gonadotropin-releasing hormone (GnRH), a hypothalamic neuropeptide that regulates reproductive endocrine function. The receptor belongs to the rhodopsin-like GPCR family and contains seven transmembrane domains connected by extracellular and intracellular loops. Unlike most mammalian GPCRs, the human type I GnRH receptor lacks a conventional cytoplasmic C-terminal tail.

GNRHR is expressed primarily by gonadotroph cells in the anterior pituitary gland. GnRH released from hypothalamic

neurons reaches these cells through the hypophyseal portal circulation and binds receptors at the plasma membrane. Receptor activation primarily engages Gq/11 proteins, stimulating phospholipase C beta and generating inositol trisphosphate and diacylglycerol. These second messengers promote intracellular calcium mobilization and protein kinase C activation, contributing to the synthesis and secretion of luteinizing hormone (LH) and follicle-stimulating hormone (FSH).

GnRH secretion is pulsatile, and the frequency and amplitude of stimulation influence gonadotropin production. Differences in pulse frequency can alter the relative expression of LH and FSH subunits, helping coordinate reproductive endocrine activity. Sustained exposure to GnRH agonists can produce receptor desensitization and suppression of gonadotropin secretion, a mechanism relevant to endocrine regulation and therapeutic research. These responses reflect the complex relationship between receptor signaling, hormone synthesis, and cellular adaptation.

Genetic alterations affecting GNRHR function can disrupt the hypothalamic-pituitary-gonadal axis. Inactivating variants have been associated with congenital hypogonadotropic hypogonadism, characterized by impaired gonadotropin secretion and reproductive development. Functional studies of these variants have identified defects involving receptor expression, intracellular trafficking, ligand binding, and signal transduction. Such investigations provide insight into the molecular mechanisms required for normal pituitary responsiveness to hypothalamic stimulation.

Beyond the anterior pituitary, GNRHR expression and signaling have been investigated in reproductive tissues and certain malignancies, including ovarian, endometrial, and breast cancers. The biological significance of these findings varies with cellular context and requires careful interpretation. NSJ Bioreagents offers this GnRH Receptor Antibody for investigating receptor expression, neuroendocrine regulation, gonadotroph signaling, and the molecular mechanisms connecting hypothalamic activity with reproductive physiology.

Explore our GPCR Antibodies for additional research tools targeting receptors involved in neuroendocrine signaling, reproductive hormone regulation, and intracellular signal transduction.

Application Notes

Optimal dilution of the GnRH Receptor Antibody F1G4 / GNRHR Monoclonal Antibody should be determined by the researcher.

1. Staining of formalin-fixed tissues requires boiling tissue sections in 10mM Tris with 1mM EDTA, pH 9.0, for 10-20 min followed by cooling at RT for 20 min
2. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

A synthetic peptide aa 1-29 (MANSASPEQNQHCSAINNSIPLMQGNLPY) from the N-terminal of human GnRHR was used as the immunogen for the GnRH Receptor antibody.

Storage

Store the GnRH Receptor antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

Gonadotropin-releasing hormone receptor antibody, Gonadoliberin receptor antibody, Luteinizing hormone-releasing hormone receptor antibody, LH-RH receptor antibody, GnRH-R antibody

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