abcam

ab202960

Anti-TSH Receptor/TSH-R antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.02% Proclin 300 Constituents: 50% Glycerol (glycerin, glycerine), 48.98% TBS, 1X, 1% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human TSHR aa 500 to C-terminus conjugated to Keyhole Limpet Haemocyanin. The exact immunogen used to generate this antibody is proprietary information. Database link P16473
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/500
Notes	Use at 1/50 - 1/200 with fluorescent detection methods. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat

Dilution info	1/100 - 1/500
Notes	Use at 1/50 - 1/200 with fluorescent detection methods. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Flow Cyt

Tested

Species	Mouse
Dilution info	1/100
Notes	ab171870 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information TSHR

Function Receptor for the thyroid-stimulating hormone (TSH) or thyrotropin (PubMed:11847099, PubMed:12045258). Also acts as a receptor for the heterodimeric glycoprotein hormone (GPHA2:GPHB5) or thyrostimulin (PubMed:12045258). TSHR is coupled to G(s) proteins and mediates the activation of adenylate cyclase (PubMed:11847099, PubMed:35940205, PubMed:35940204). This leads to the generation of cyclic adenosine monophosphate (cAMP), which in turn activates protein kinase A (PKA). PKA subsequently phosphorylates downstream targets involved in thyroid hormone biosynthesis and secretion, including thyroid peroxidase (TPO) and the sodium/iodide symporter (NIS) (PubMed:27638195). Additionally, plays a central role in controlling thyroid cell metabolism (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The TSH Receptor (TSH-R) also known as thyrotropin receptor is an important protein in the regulation of the thyroid gland. Its molecular mass is approximately 84 kDa. TSH-R is predominantly expressed on the surface of thyroid follicular cells. This receptor functions mechanically by binding thyroid-stimulating hormone (TSH) initiating a cascade that increases the production and release of thyroid hormones such as thyroxine (T4) and triiodothyronine (T3). This receptor is critical in maintaining proper thyroid function.
Biological function summary	TSH-R plays an important role in the regulation of metabolic processes. As part of the endocrine system the TSH-R interacts with TSH secreted by the anterior pituitary modulating signaling pathways that contribute to cell growth differentiation and hormone production in the thyroid gland. TSH-R is a component of the G protein-coupled receptor family sharing structural similarities with other receptors in this group. Additionally its activation influences the synthesis of both T4 and T3 which are essential for normal development metabolism and thermoregulation.
Pathways	The TSH-R is important in the cyclic AMP (cAMP) signaling pathway. Upon TSH binding the receptor activates adenylate cyclase via the Gs protein resulting in cAMP production. This activation influences several downstream processes that promote thyroid hormone synthesis and secretion. Furthermore TSH-R engages in cross-talk with other pathways related to cell proliferation and survival. The receptor is linked with proteins like G proteins that mediate its signaling effects integrating into the broader network of hormonal regulation.
Associated diseases and disorders	TSH-R is strongly associated with autoimmune thyroid diseases particularly Graves' disease and Hashimoto's thyroiditis. In Graves’ disease stimulating antibodies known as thyroid-stimulating immunoglobulins (TSI) mimic TSH and activate the TSH-R causing overproduction of thyroid hormones and leading to hyperthyroidism. In Hashimoto's thyroiditis TSH-R participates indirectly as autoantibodies can lead to receptor destruction and subsequent hypothyroidism. These conditions often involve interactions with additional immune-related proteins such as T cells and cytokines affecting overall immune tolerance in the thyroid gland.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

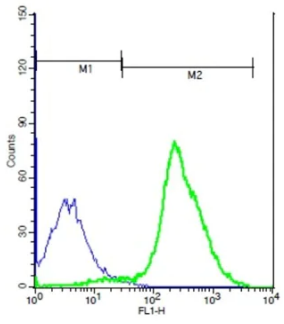
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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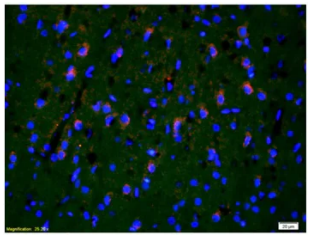
3 product images



Flow Cytometry - Anti-TSH Receptor/TSH-R antibody (ab202960)

TSH Receptor/TSH-R Flow Cytometry staining using rabbit Anti-TSH Receptor/TSH-R antibody

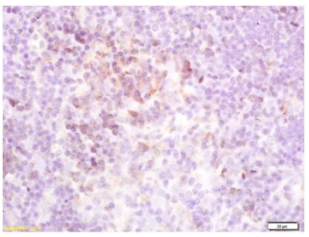
Flow Cytometry analysis of Mouse thymocytes labeling TSH Receptor/TSH-R using ab202960 at 1/100 dilution (green) followed by a FITC conjugated secondary compared to control cells (blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TSH Receptor/TSH-R antibody (ab202960)

TSH Receptor/TSH-R Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TSH Receptor/TSH-R antibody

Immunohistochemical analysis of formalin-fixed and paraffin-embedded Rat brain tissue labeling TSH Receptor/TSH-R using ab202960 at 1/200 dilution, followed by Goat Anti-Rabbit IgG, Cy3 conjugated secondary antibody at 1/200 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TSH Receptor/TSH-R antibody (ab202960)

TSH Receptor/TSH-R Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TSH Receptor/TSH-R antibody

Immunohistochemical analysis of formalin-fixed and paraffin embedded Mouse spleen tissue labeling TSH Receptor/TSH-R using ab202960 at 1/200 dilution, followed by conjugation to the secondary antibody and DAB staining.

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