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TSHR (CT) Rabbit pAb

Catalog # AP99890

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P16473
Other Accession	P16473
Reactivity	Human
Predicted	Rat, Pig, Rabbit, Chicken, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	86844
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human TSHR
Epitope Specificity	648-740/764
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the G-protein coupled receptor 1 family. FSH/LSH/TSH subfamily. Contains 7 LRR (leucine-rich) repeats.
SUBUNIT	Interacts (via the PDZ-binding motif) with SCRIB; regulates TSHR trafficking and function.
DISEASE	Note=Defects in TSHR are found in patients affected by hyperthyroidism with different etiologies. Somatic, constitutively activating TSHR mutations and/or constitutively activating G(s)alpha mutations have been identified in toxic thyroid nodules (TTNs) that are the predominant cause of hyperthyroidism in iodine deficient areas. These mutations lead to TSH independent activation of the cAMP cascade resulting in thyroid growth and hormone production. TSHR mutations are found in autonomously functioning thyroid nodules (AFTN), toxic multinodular goiter (TMNG) and hyperfunctioning thyroid adenomas (HTA). TMNG encompasses a spectrum of different clinical entities, ranging from a single hyperfunctioning nodule within an enlarged thyroid, to multiple hyperfunctioning areas scattered throughout the gland. HTA are discrete encapsulated neoplasms characterized by TSH-independent autonomous growth, hypersecretion of thyroid hormones, and TSH suppression. Defects in TSHR are also a cause of thyroid neoplasms (papillary and follicular cancers).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The glycoprotein hormone receptor family consists of the luteinizing hormone receptor, the follicle-stimulating hormone receptor, and the thyroid stimulating hormone(TSH) receptor. TSH, which is released from the pituitary gland, binds to the TSH receptor on thyroid cells to control size and function of the thyroid gland (De Felice et al. 2004). The TSH receptor signals through Gs to elevate intracellular cAMP in the thyroid gland, which regulates iodide uptake, and transcription of thyroglobulin (Tg), thyroid peroxidase (TPO), and sodium-iodide symporter. The TSH receptor also signals Gq and phospholipase C to regulat iodide efflux, H2O2 production, and thyroglobulin iodination. Autoimmunity to the TSH receptor causes hyperthyroidism (Graves disease) or hypothyroidism (Hashimoto thyroiditis) when the

autoantibodies function as agonists or antagonists, respectively, at the TSH receptor (Rapoport and McLachlan, 2001; Davies et al., 2002). Millipore's cloned human TSH receptor-expressing cell line is made in the Chem-10 host, which supports high levels of recombinant TSH receptor expression on the cell surface and contains high levels of the promiscuous G protein to couple the receptor to the calcium signaling pathway. Thus, the cell line is an ideal tool for screening for antagonists of interactions between TSH and its ligands.

Additional Information

Gene ID	7253
Other Names	CHNG1; LGR3; hTSHR-I; TSHR_HUMAN; TSHR; Thyroid-stimulating hormone receptor (TSH-R); TSHR_MOUSE; hypothroid; hyt; pet; thyroid stimulating hormone receptor
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	TSHR
Synonyms	LGR3
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).
Cellular Location	Cell membrane; Multi-pass membrane protein. Basolateral cell membrane; Multi-pass membrane protein
Tissue Location	Expressed in thyroide cells (at protein level) (PubMed:11847099). Expressed in the thyroid (PubMed:2610690)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.