

**Antibody to TSH Receptor (TSHR), A9**
MOUSE MONOCLONAL

Catalog Number: AB-N15
Quantity: 100 micrograms
Format: PBS (0.14 M Sodium Chloride; 0.003 M Potassium Chloride; 0.002 M Potassium Phosphate; 0.01 M Sodium Phosphate; pH 7.4), no preservative.
Host: Mouse
Isotype: IgG₁
Clone: A9
Immunogen: recombinant GST-TSHR fusion protein (amino acids found in the middle region of the TSHR, residues 147-228)

Background: The thyrotropin receptor (TSHR), a G-protein coupled, seven-transmembrane receptor, is present on the basal surface of thyroid follicular cells. It is involved in regulating thyrocyte cell growth and function by mediating thyroid-stimulating hormone (TSH) action. The TSHR is also the target autoantigen in autoimmune thyroid diseases. Autoantibodies to the TSHR that stimulate cAMP production in thyrocyte cells, called thyroid stimulating antibodies (TSAb), are responsible for the hyperthyroidism of Graves' Disease. Another class of autoantibodies that block the binding of TSH to the TSHR, thyroid-blocking antibodies (TBAb), may mediate the hypothyroidism associated with Hashimoto's thyroiditis, primary myxoedema, and neonatal hypothyroidism. Studies indicate that these autoantibodies interact primarily with the extracellular region of the TSHR.

Specificity & Preparation: This antibody recognizes the extracellular domain of the human TSH receptor (TSHR). The murine monoclonal antibody A9 is specific for residues 147-228 of the TSHR. This epitope is localized in the middle regions of the extracellular domain of the TSHR, an area that may be exposed at the surface of native TSHR. It was produced in mouse by immunization with a recombinant GST-TSHR fusion protein, then construction of a hybridoma with the non-immunoglobulin-secreting myeloma cell line X63-Ag8-653. Amino acids found in the middle region of the TSHR, residues 147-228, were used to construct the fusion protein.

Usage: Applications include immunoblotting (Western, ascites 1:20,000)², immunohistochemistry (frozen unfixed, acetone-fixed, and periodate-lysine-paraformaldehyde-fixed sections; ascites 1:50)², immunoprecipitation¹, and ELISA (1:1,000-1:1,000,000 of ascites)².

Storage: Store the antibody at 4°C for one month or -20°C in undiluted aliquots for up to one year. Avoid repeated freezing and thawing. Gently spin down material 5-10 seconds in a microfuge before use.



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Selected References:

1. Morgenthaler NG, Hodak K, Seissler J, Steinbrenner H, Pampel I, Gupta M, McGregor AM, Scherbaum WA, Banga JP. (1999) Direct binding of thyrotropin receptor autoantibody to *in vitro* translated thyrotropin receptor: A comparison to radioreceptor assay and thyroid stimulating bioassay. *Thyroid* 9(5):467-475.
2. Nicholson LB, Vlase H, Graves P, Nilsson M, Molne J, Huang GC, Morgenthaler NG, Davies TF, McGregor AM, Banga JP (1996) Monoclonal antibodies to the human TSH receptor: epitope mapping and binding to the native receptor on the basolateral plasma membrane of the thyroid follicular cells. *J Mol Endocrinol* 16:159-170.

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