

**Antibody to TSH Receptor (TSHR), A7
MOUSE MONOCLONAL**

Catalog Number:	AB-N14
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:	IgG _{2b}
Clone:	A7
Immunogen:	recombinant GST-TSHR fusion protein (amino acids 402-415 at the carboxyl terminus of the TSHR)

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 and Preparation:

This antibody recognizes the extracellular domain of the human TSH receptor (TSHR). The murine monoclonal antibody A7 is specific for residues 402-415 of the TSHR. This epitope is localized at the extreme carboxyl terminal of the extracellular domain of the TSHR, a region that may be masked from 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 402-415 at the carboxyl terminus of the TSHR were used to construct the fusion protein.

Usage and Storage:

Applications include immunoblotting (Western, ascites 1:2,000)², immunohistochemistry (acetone-fixed cells, ascites 1:50)², immunoprecipitation¹, and ELISA (1:1,000-1:1,000,000 of ascites)². 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 before use; 5-10 seconds in a microfuge should be adequate.

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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