

**MULTISCREEN™ STABLE CELL LINE
HUMAN RECOMBINANT TSH RECEPTOR**

Data sheet

PRODUCT INFORMATION

Catalog Number: H1177

Lot Number: H1177-120810

Quantity: 1 vial (2×10^6) frozen cells

Freeze Medium: Sigma Freezing Medium (C-6164)

Host cell: HEK293T

Transfection: Full-length Human TSHR cDNA (GenBank Accession Number NM_000369) with FLAG-tag sequence at the N-terminus

Recommended Storage: Liquid nitrogen upon receiving

Propagation Medium: DMEM, 10% FBS, 1 μ g/mL puromycin

Stability: Stable in culture for minimum of two months

Background: The thyroid stimulating hormone receptor (TSHR) is expressed in the membrane of thyroid follicular cells. It is involved in regulating thyrocyte cell growth and function. TSHR is also the target autoantigen in thyroid autoimmune diseases. Autoantibodies to TSHR that act as agonists are responsible for the hyperthyroidism of Graves' Disease. Another class of autoantibodies that block the binding of TSH to TSHR may mediate the hypothyroidism associated with Hashimoto's thyroiditis, primary myxoedema, and neonatal hypothyroidism.

The Multispan TSHR cell line contains the cDNA sequence identical to GenBank sequence NM_000369 except for one base pair mutation that results in a change in amino acid at position 727 (from glutamic acid to aspartic acid). This has been reported as a natural variant. The allele with glutamic acid has been proposed as a predisposing factor in toxic multinodular goiter pathogenesis.

Application: Functional assays

Figure 1

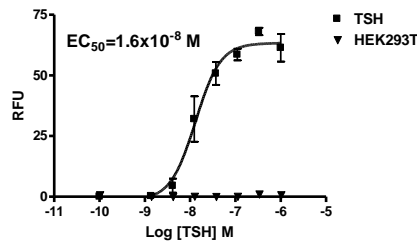


Figure 2

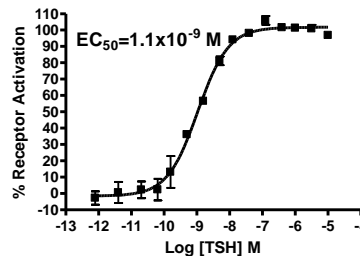


Figure 1. Dose-dependent stimulation of calcium flux upon treatment with ligand, monitored with FlexStation. **Figure 2.** Dose-dependent stimulation of intracellular cAMP accumulation upon treatment with ligand, measured with cAMP HiRange kit (Cisbio 62AM6PEC). **Figure 3.** Receptor expression on cell surface measured by flow cytometry (FACS) using an anti-FLAG antibody. Thin line: parental cells; thick line: receptor-expressing cells.

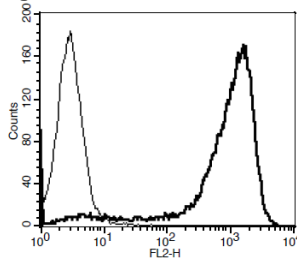
References:

Morgenthaler *et al.* (1999) Direct binding of thyrotropin receptor autoantibody to in vitro translated thyrotropin receptor: a comparison to radioreceptor assay and thyroid stimulating bioassay. *Thyroid* 9:466-475.

Davies *et al.* (2005) Thyrotropin receptor-associated diseases: from adenomata to Graves disease. *J Clin Invest* 115:1972-1983.

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Figure 3



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