

## Product specifications

---

Name	Anti-h TSH 5404 SP-5
Specificity	Antibody recognizes human thyrotropin and its free beta subunit
Description	Monoclonal mouse antibody, cultured <i>in vitro</i> under conditions free from animal-derived components.
Product code	100026
Product buffer solution	0.9 % NaCl, 0.095 % NaN <sub>3</sub> as a preservative
Shelf life and storage	36 months from manufacturing at 2–8 °C
Subclass	IgG <sub>1</sub>
Analyte description	Thyroid-stimulating hormone (also known as TSH or thyrotropin) is a peptide hormone synthesized and secreted by thyrotrope cells in the anterior pituitary gland which regulates the endocrine function of the thyroid gland. TSH levels are tested in the blood of patients suspected of suffering from excess (hyperthyroidism), or deficiency (hypothyroidism) of thyroid hormone.

## Parameters tested on each lot

---

Product appearance	Liquid, may turn slightly opaque during storage
Product concentration	5.0 mg/ml (+/- 10 %)
Immunoreactivity	80–120 % compared to the reference sample in an FIA test
IEF Profile	6.6–7.2
Purity	≥ 95 %

## Kinetic parameters

---

Association rate constant	$8.5 \times 10^5$ 1/Ms
Dissociation rate constant	$3.9 \times 10^{-5}$ 1/s
Affinity constant	$K_A = 2.2 \times 10^{10}$ 1/M; $K_D = 4.6 \times 10^{-11}$ M (= 0.05 nM)
Determination method	SPR analysis (ProteOn XPR36)
Determination antigen	TSH, Scripps (Cat T0114, Lot 2414402)

**Cross-reactivities**

hCG < 0.05 % (Boehringer, Cat 253065, Lot 10774821-25)  
 LH 1.0 % (Scripps Laboratories, Cat L0814, Lot 125711)  
 FSH 1.0 % (Boehringer, Cat 252999, Lot 1483403)

**Epitope**

Group 1

**Pair recommendations**

		DETECTION					
		5401	5404	5405	5407	5408	5409
CAPTURE	5401	-	-	+	+	-	+
	5404	-	-	+	+	-	+
	5405	-	-	-	-	+	+
	5407	-	-	-	-	+	+
	5408	-	-	+	+	-	+
	5409	-	-	+	+	-	-

Following pairs are especially recommended for the below mentioned assays:

CLIA: 5405 (capture) – 5409 (detection), 5407 – 5409 and 5409 – 5407

LF: 5405 (membrane) – 5409 (particles), 5407 – 5409, 5408 – 5405 5408 – 5407, 5408 – 5409, 5409 – 5407

Please note that pair recommendations are based on results obtained by our laboratory. Equally good results may be obtained using other pairs and therefore these recommendations are only indicative.

**Platforms tested**

FIA, LF, CLIA

**Antigens tested**

Native TSH antigen Lee Biosolutions 996-50 and 996-51.

**Product stability**

TEMPERATURE, TIME	RESULT
-70 °C, 21 days	Not Determined (N/D)
-20 °C, 21 days	N/D
+4 °C, 21 days	N/D
+35 °C, 7 days	N/D
+35 °C, 21 days	N/D
+45 °C, 3 days	N/D
+45 °C, 7 days	N/D

Stability testing is performed in the product buffer to see whether different temperatures affect the antigen binding, charge or composition of the antibody. Please note that the shelf life given on the first page is based on real time stability testing at 2–8 °C in the product buffer.

**Miscellaneous**

-

**References**

Brockmann, E.-C., Petterson, K and Vehniäinen M. (2010) Use of high-capacity surface with oriented recombinant antibody fragments in a 5-min immunoassay for thyroid-stimulating hormone. Anal. Biochem., 396:242-249

Eskola, J., Mäkinen, P., Oksa, L., Loikas, K., Nauma, M., Jiang, Q., Håkansson, M., Suomi, J. and Kulmala, S. (2006) Competitive immunoassay by hot electron-induced

electrochemiluminescence detection and using a semiautomatic electrochemiluminometer. J. Luminesc., 118:238-244

Helenius, T. and Tikanoja, S. (1986) A sensitive and practical immunoradiometric assay of thyrotropin. Clin. Chem. 32:514-518

von Lode, P., Hagrén, V., Palenius, T. and Lövgren, T., (2003) One-step quantitative thyrotropin assay for the detection of hypothyroidism in point-of-care conditions. Clin. Biochem., 36:121-128

Wu, F.-B., Han, S.-Q. and He, Y.-F. (2002) Time-resolved immunofluorometry of serum hTSH with enhanced sensitivity. J. Immunoass. Immunochem., 23(2):191-210

**Legal disclaimer**

Medix Biochemica products meet their specifications if transported, stored and used according to the instructions. MedixMAB and MedixAntigens are trademarks of Medix Biochemica and may not be used or reproduced without Medix Biochemica's written permission.

