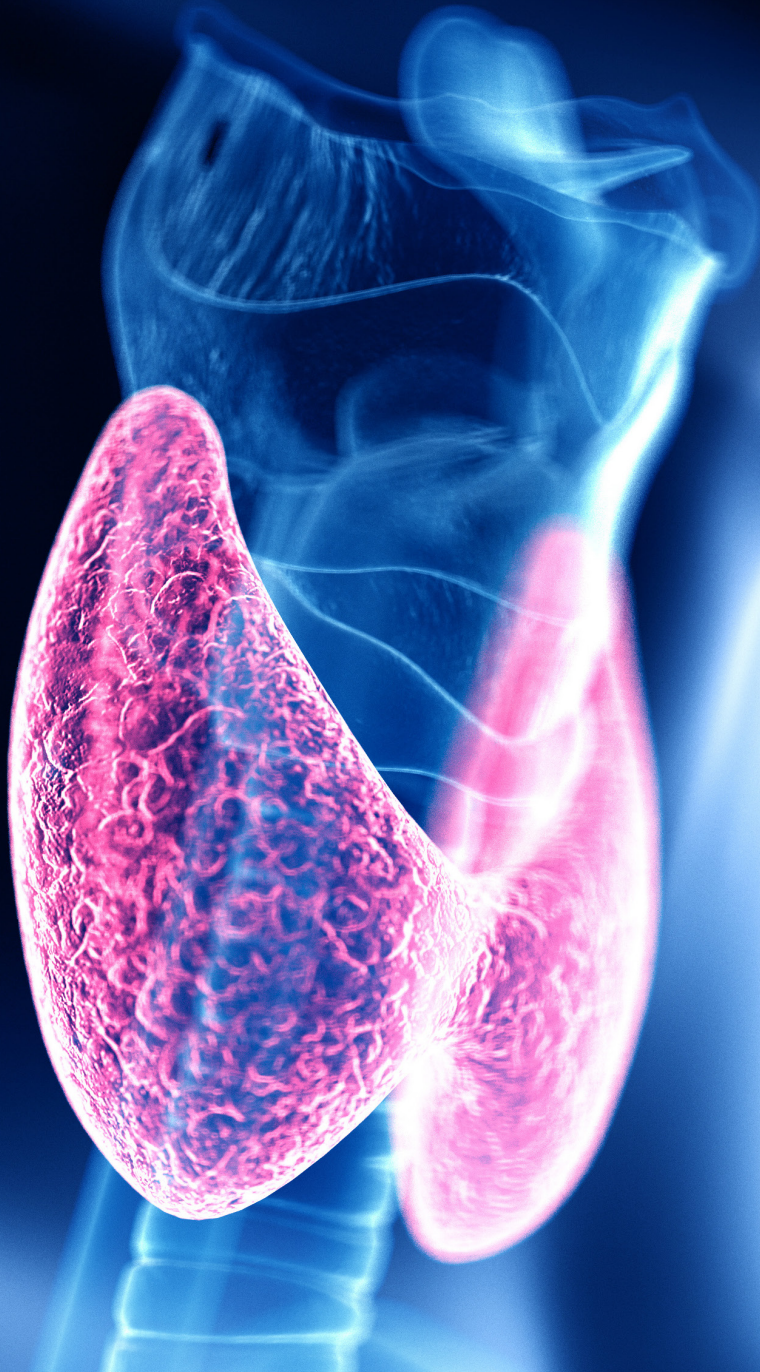


# Medizym® T.R.A. human

ELISA for the quantitative determination of antibodies  
against thyreotropin (TSH) receptor (TRAb)



## Product Highlights

- ELISA of the third generation for diagnosis of Graves' disease
- Excellent diagnostic efficiency with high sensitivity and specificity
- Automatable

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30 Years of Experience, 150 Partners in more than 100 Countries

## Antibodies against Thyreotropin (TSH) Receptor and their Importance in the Diagnosis of Graves' Disease

### Graves' Disease

Graves' disease is an autoimmune disease of the thyroid gland that leads to enlargement (goiter) and an excessive production of the thyroid hormones triiodothyronine (T3) and thyroxine (T4).

### Epidemiology

In countries with a good iodine supply, Graves' disease is the most common cause of hyperthyroidism. Women are more affected than men. The exact causes that lead to the onset of the disease have not yet been clarified, but in addition to genetic factors, stress and environmental influences as well as viral infections are discussed as potential causes.

### Clinical Symptoms

The symptoms of Graves' disease are very diverse: The consequences of an overactive thyroid (hyperthyroidism) range from insomnia, irritability, nervousness and tremors, sinus tachycardia, extrasystoles, atrial fibrillation, weight loss despite cravings, heat intolerance, sweating, osteoporosis and menstrual disorders. Excessive enlargement of the thyroid gland often causes difficulties in swallowing and a pronounced feeling of pressure in the throat. Outside the thyroid gland, Graves' disease often manifests as an endocrine orbitopathy, which is characterized by protrusion of the eyeballs (exophthalmos).

### Diagnosis

The diagnosis of Graves' disease is made on the basis of the clinical symptoms and confirmed by laboratory diagnostics by determining antibodies against the thyrotropin receptor (thyroid-stimulating hormone, TSH). TSH receptor antibodies (TRAb) are evidence of Graves' disease. They stimulate the absorption of iodine and the production of thyroid hormones, which manifests itself in hyperthyroidism and thyroid growth (goiter). In the absence of TSH receptor antibodies, the determination of antibodies against thyroid peroxidase (TPO) and thyroglobulin (Tg) can support the diagnosis. For the further assessment of the thyroid function, the activity of the thyroid hormones TSH, T3 and T4 is determined.

### Therapy

Symptoms of an overactive thyroid (hyperthyroidism) can be treated with medication by administering anti-thyroid drugs. However, remissions often occur after a short time, so that an operation or radioiodine therapy becomes necessary.

### Publication

Roggenbuck, J.J., Veiczi, M., Conrad, K., Schierack, P., Wunderlich, G., Kotzerke, J., Roggenbuck, D., Zöphel, K. (2018) A novel third-generation TSH receptor antibody (TRAb) enzyme-linked immunosorbent assay based on a murine monoclonal TSH receptor-binding antibody. *Immunol Res.* 66, 768 - 776.

# Medizym® T.R.A. human – Enzyme Immunoassay for the quantitative Determination of Antibodies against the TSH receptor (TRAb)

## Antigen and Antibody

The competitive Medizym® T.R.A. human immunoassay is based on the use of recombinant human TSH receptor and monoclonal antibodies.

## Calibration

The Medizym® T.R.A. human immunoassay is calibrated using the international standard preparation NIBSC code 08/204. Quantitative results are expressed in IU/L.

## Precision

The precision of test results was assessed by the determination of the intra- and interassay variation by the analysis of multiple samples with different antibody activities.

	INTRAASSAY PRECISION		INTERASSAY PRECISION	
	IU/L	CV (%)	IU/L	CV (%)
Sample 1	0.9	10.5	0.8	21.9
Sample 2	5.1	8.1	4.8	15.5
Sample 3	15.0	7.8	15.7	16.1

## Diagnostic Sensitivity and Specificity

Sensitivity and specificity of the immunoassay were assessed by the analysis of 48 samples from patients with Graves' disease and 77 samples from unselected blood donors.

	DIAGNOSTIC PERFORMANCE
Sensitivity	95 %
Specificity	99 %





## Medizym® T.R.A. human

Competitive enzyme immunoassay for the quantitative determination of antibodies against the TSH receptor (TRAb) in human serum

### HIGH QUALITY – MADE IN GERMANY

- Use of a combination of recombinant human TSH receptor and monoclonal antibody
- Ready-to-use (exception: conjugate and wash buffer) and barcoded reagents
- Quality assured handling in routine laboratories
- Incubation at room temperature
- Quantitative determination of antibodies against the human TSH receptor (TRAb)
- Calibrated with the international standard preparation NIBSC code 08/204
- Results expressed in IU/L
- Excellent diagnostic sensitivity and specificity
- High precision within the measurement range
- CE marked
- Automatable

### Product Information

#### Medizym® T.R.A. human



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### Order Information

**Medizym® T.R.A. human**

(96 Determinations)

**REF 3505**