

## Serum-soluble IL-2 receptor

T lymphocytes play a key role in the immune system. They are responsible for maintaining cellular immunity against persistent intracellular pathogens (viruses, bacteria, parasites) amongst others.

Interleukin-2 (IL-2, T-cell growth factor) is the most important cytokine involved in T cell activation. It stimulates proliferation of T lymphocytes and enables them to exert their effector functions, e.g., activating additional T cells and monocytes/macrophages, activating cytotoxic T cells and aiding in antibody synthesis. However, quantitative measurement of IL-2 in the serum has not been diagnostically relevant to date.

Soluble IL-2 receptor can now be used to quantify lymphocytic activation. The binding of interleukin 2 to the IL-2 receptor on the lymphocyte surface communicates the actual activation stimulation to the T lymphocytes. IL-2 activated lymphocytes increase the number of membrane-bound IL-2 receptors and also release a soluble form (soluble IL-2 receptor = sIL-2R) into the bloodstream. The function of the sIL-2R is to bind excess IL-2 and to subsequently release it (depot action). The sIL-2R can be measured at a low level in the serum of healthy volunteers and increases significantly in a range of diseases with T cell activation (see indications). Unlike global activation markers of inflammation such as CRP or ESR, sIL-2R specifically and rapidly indicates that T lymphocytes are activated in the patient and is thus very well suited for diagnosing and monitoring these immune-related diseases.

### Indications for measuring serum soluble IL-2 receptor

- Diagnosing and monitoring sarcoidosis (best course parameter, better than ACE)
- Rheumatoid arthritis and other connective tissue diseases (due to its high turnover rate, it is particularly suitable for assessing the success of treatment with steroids and other anti-inflammatory preparations)
- Other active T-cell-mediated immune diseases such as reactive arthritis, chronic inflammatory bowel disease or hepatitis

- Suspected lymphoproliferative diseases (usually drastic increases with B and T lymphomas)
- Suspected rejection reactions with allotransplant recipients (primarily kidneys, heart)

Monitoring immune activation after immunostimulant therapy is **not an indication** for measuring soluble IL2 receptor. The level of the sIL2 receptor in the serum does not correlate with the function of the T lymphocytes because the sIL2 receptor is released by both cytotoxic and regulatory (suppressor) CD4 and CD8 lymphocytes. The lymphocyte transformation test (LTT Immune Function) is suitable to determine the T cell function.

IMD Labor Berlin		medical report	
Test	Result	Unit	Reference Range
Soluble IL2 receptor i.s. (CLIA)	3216	U/ml	< 710
The result indicates a clear activation of the T cell immune system.			

Fig. 1 Sample report

### Material

2 ml whole blood

Sample receipt within 24 hrs has to be ensured. The sample should be stored and transported at room temperature. Within the Berlin city area, we offer a courier service (+49 (0)30 7701- 250). For collections beyond Berlin, please contact our complimentary courier service (+49 (0)30 77001-450).

### Invoicing

The costs for the test is 27.98 €.

We would be glad to send you detailed information about the serum cytokine diagnostics (TNF $\alpha$ , IL-6), the underlying medical and scientific principles and therapeutic consequences.

Do you have questions? Our serviceteam will be happy to support you: +49 (0)30 770 01-220.