

# Topoisomerase antibodies

## General:

Antibodies against the nuclear enzyme topoisomerase I (MW: 90.7 kDa; Chromosome 20q12) are of importance for the unwinding of the super helical double-stranded DNA. The antibodies against topoisomerase I recognize two or more epitopes, including a universal epitope, which is located close to the catalytically active region. This probably explains the inhibition of the DNA-topoisomerase I by human autoantibodies. The antibodies against topoisomerase I belong mainly to the IgG- and IgA-classes, rarely to the IgM-class.

## Occurrence:

Topoisomerase I antibodies are found in 20-40% of patients with systemic sclerosis. They occur equally in male and female. Apparently in Japanese as well as in black Americans they are found more frequently than in Caucasians. They are not increased in relatives of scleroderma patients. The presence of topoisomerase I confirms the diagnosis of sclerodermia but does not exclude other collagenoses such as systemic Lupus erythematosus and Sjögren syndrome. Although the antibodies of sclerodermia patients with diffuse skin lesions occur more often compared to those with acroscleroderma, a differential diagnosis is not possible based on the presence of antibodies. Over a long period the antibody concentration is relatively stable. They are rarely found in diseases other than sclerodermia (primary Raynaud-phenomenon).

Patients with topoisomerase I autoantibodies often present, compared to those without, an involvement of skin and heart. The antibodies are associated with kidney-involvement, pulmonary fibrosis, ischemic ulceration of the fingers. They have a high specificity, however they have also been described in patients with silicon implants and chronic pancreatitis.

**Indication:** Suspicion of scleroderma, scleroderma-overlap-syndrome. Identification of specific antibodies in positive ANA immunofluorescence testing (IFT) with fine granular fluorescence pattern

**Material:** 1 ml serum

**Stability:** upto 14 days at 2 to 8°C

**TAT:** 3 days, FML

**Method:** BLOT (incl. in ANA Profile)

**Units:** qualitative

For more information on this laboratory test offered at Freiburg Medical Laboratory, please visit

<http://www.fml-dubai.com/parameter-listings/>