Autoantibodies against DNA Topoisomerase I (Scl-70)

DNA topoisomerase I is a key nuclear enzyme that interconverts supercoiled DNA to the topological conformations required for DNA replication and transcription. In human tissues, DNA topoisomerase I is initially synthesized as a protein with a molecular weight of 100 kDa. Most of this precursor is then proteolytically processed to a 70 kDa form. The latter is the name-giving antigen for the so-called Scl-70 autoantibodies, which are considered a highly specific marker among the different autoantibodies known to occur in systemic sclerosis/scleroderma patients. This disease represents a rare connective tissue disorder that is characterized by abnormal thickening of the skin. Scl-70 autoantibodies are detected in approximately 30 – 40% of patients diagnosed with systemic sclerosis/scleroderma. However, some studies reported a prevalence of up to 75%. The presence of Scl-70 autoantibodies is very often associated with diffuse skin involvement and pulmonary fibrosis.

DIARECT produces DNA topoisomerase I (Scl-70) antigens in the baculovirus/insect cell expression system. To allow optimal assay development, DIARECT offers two distinct Scl-70 antigens: one is the full-length 100 kDa enzyme precursor (Scl-70; full length), the other one is a truncated variant resembling the processed 70 kDa form (Scl-70; truncated). Recombinant Scl-70 antigens are vigorously tested to meet DIARECT's high standards regarding quality and lot-to-lot consistency (Fig. 1,2).

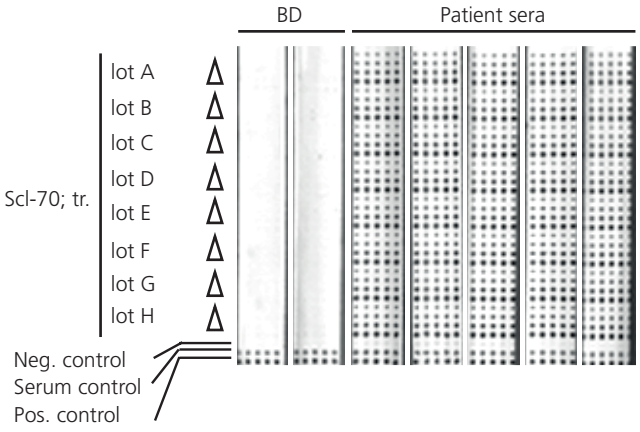

Figure 1: Immunodot analyses of increasing amounts of different lots of Scl-70 truncated (Scl-70; tr.) using sera from blood donors (BD) and patients with presumed systemic sclerosis.

Besides the two recombinant Scl-70, DIARECT additionally offers native Scl-70 isolated from bovine calf thymus (Scl-70; non-recombinant; bovine). Like its recombinant counterparts, the quality and lot-to-lot consistency of native Scl-70 is vigorously tested. The obtained data strongly suggest that the native and recombinant antigens perform equally well in immunodot analyses (Fig. 2).

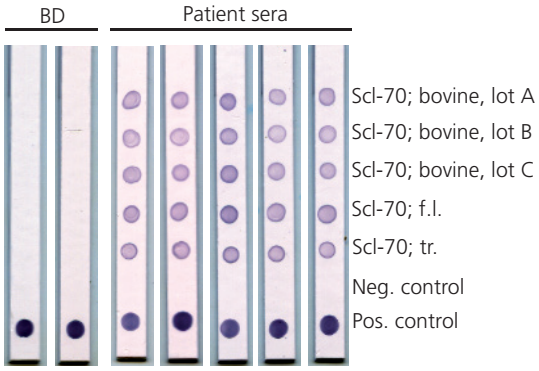

Figure 2: Immunodot analyses of sera from blood donors (BD) and patients with presumed systemic sclerosis. Recombinant full length Scl-70 (Scl-70; f.l.) and truncated Scl-70 (Scl-70; tr.) were analyzed and compared to three different lots of non-recombinant, native Scl-70 purified from bovine sources (Scl-70; bovine).

References:
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Ho *et al.* (2003) Arthritis Res Ther. 5: 80-93
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Ordering Information		
12400 12401	DNA Topoisomerase I (Scl-70; full length)	0.1 mg 1.0 mg
14500 14501	DNA Topoisomerase I (Scl-70; truncated)	0.1 mg 1.0 mg
11500 11501	DNA Topoisomerase I (Scl-70; non recombinant; bovine)	0.1 mg 1.0 mg

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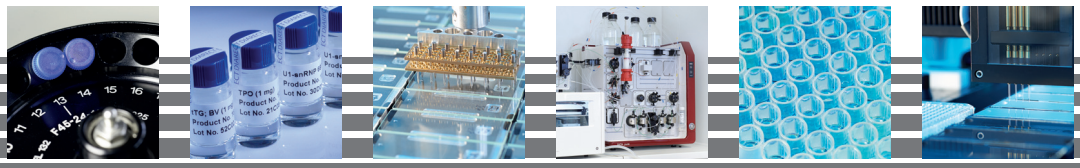

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