Autoantibodies against Signal Recognition Particle (SRP54)

The signal recognition particle (SRP) is a cytoplasmic ribonucleoprotein complex that directs the translocation of newly synthesized proteins containing a N-terminal signal sequence from the polysomes to the endoplasmic reticulum. SRP is composed of six polypeptides and a tRNA-like molecule known as 7SL RNA. The 54 kDa subunit of SRP (SRP54) is a GTP-binding protein and has been shown to interact with the signal sequences of nascent secretory and membrane proteins. SRP54 contains three domains: an N-terminal helical bundle domain, a GTPase domain, and the M-domain that binds the 7SL RNA as well as the signal sequence.

Idiopathic inflammatory myositis, also called idiopathic inflammatory myopathy (IIM), represents a heterogenous autoimmune disease. Historically, characteristic symptoms like chronic muscle inflammation or necrosis and skin lesions lead to the definition of distinct subtypes, e.g. polymyositis (PM) and dermatomyositis (DM). Scientific progress identified several IIM associated autoantibodies serving as an additional tool for the diagnosis of IIM subtypes.

Anti-SRP autoantibodies are rare and only detected in approximately 5% of myositis patients, especially those with PM, an autoimmune syndrome characterized by chronic muscle inflammation of unknown cause. The classical anti-SRP syndrome or anti-SRP myopathy describes an acute and aggressive onset of the disease, as well as myalgias and a common involvement of the heart. Based on its clinical features and histopathology, anti-SRP myopathy is often considered a distinct myopathy itself.

Although SRP autoantibodies against all six SRP subunits including the 7SL RNA have been identified by immunoprecipitation assays, autoantibodies against the SRP54 subunit are predominantly detected.

DIARECT's full-length human SRP54 is produced in the baculovirus/insect cell expression system.

Ordering Information		
18400	SRP54	0.1 mg
18401		1.0 mg

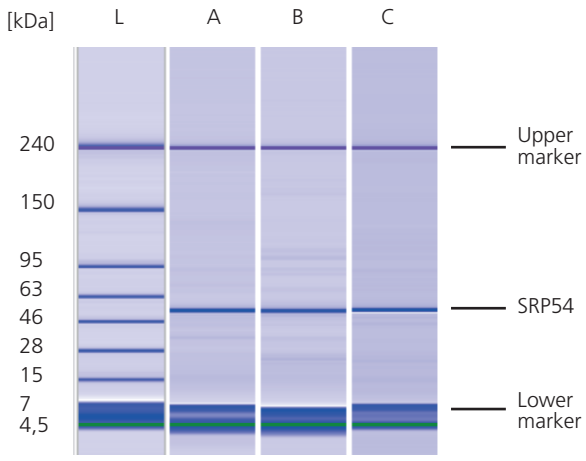

Figure 1: Electrophoretic analyses of three independent SRP54 lots (A, B, and C). An upper and lower marker were added to the SRP54 samples prior to loading. The molecular weight of the protein standards included in the size ladder (L) are indicated on the left.

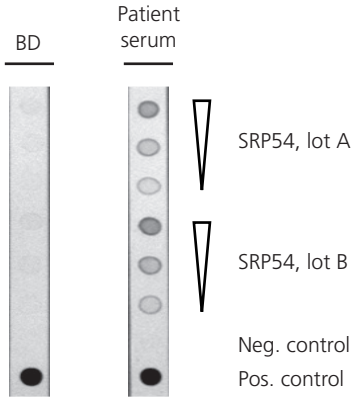

Figure 2: Immunodot analysis of serum from a blood donor (BD) and a patient with myositis for the presence of anti-SRP54 autoantibodies. Increasing amounts of two different recombinant SRP54 lots were included in the analysis.

References:
Betteridge *et al.* (2011) Arthritis Res Ther. 13:209
Casciola-Rosen *et al.* (2012) Curr Opin Rheumatol. 24:602 - 608
Reeves *et al.* (1986) PNAS. 83:9507 - 9511
Römisch *et al.* (2006) Arthritis Res Ther. 8:R39
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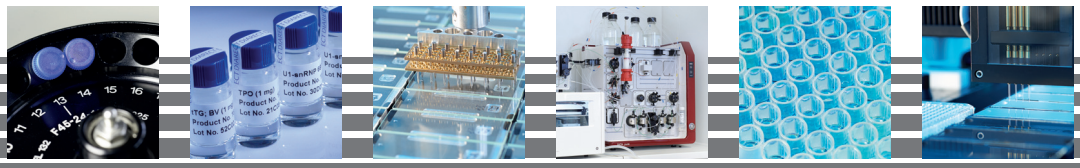

DIARECT AG · Bötzinger Str. 29 B · 79111 Freiburg · Germany
Tel. +49 761 47979-0 · Fax +49 761 47979-29 · orders@diarect.com · www.diarect.com