DIARECT
Part of BBI Solutions

DFS70 (Dense Fine Speckles 70 kDa)

The term systemic autoimmune rheumatic diseases (SARD) describes a group of various autoimmune diseases, e.g., systemic lupus erythematosus, systemic sclerosis, and sjøgren's syndrome, which affect the body's connective tissue and are not limited to a specific organ (Solomon *et al.* 2002). Numerous studies described that various anti-nuclear autoantibodies (ANA) can be detected in sera of patients diagnosed with SARD by indirect immunofluorescence (IIF) using HEp-2 cells as substrate (Solomon *et al.* 2002 and references therein). However, ANA have also been reported for healthy individuals with a prevalence of up to 31.7% depending on the study and experimental conditions (Mariz *et al.* 2011; Tan *et al.* 1997; Watanabe *et al.* 2004). In a study published by Watanabe *et al.* in 2004, approximately 20% of healthy individuals were found to be serologically positive for ANA by IIF. Intriguingly, the majority of these sera gave rise to a so-called dense fine nuclear speckled (DFS) pattern, which is characterized by uniformly distributed fine speckles throughout the nucleus of interphase cells and on chromosomes of metaphase cells (Ochs *et al.* 1994; Ochs *et al.* 2016).

This DFS pattern was initially described by Ochs *et al.* in 1994 during the IIF analysis of sera from patients diagnosed with interstitial cystitis. Based on the identification of a 70-kDa protein upon Western blot analysis of cellular extracts with these patient sera, this protein was therefore termed DFS70. In a follow up study (Ochs *et al.* 2000), DFS70 was identified to be identical with lens epithelium-derived growth factor/transcription coactivator p75 (LEDGF/p75), a transcription factor that is attached to chromatin throughout the cell cycle and appears to be involved in the cellular stress response as well as the integration of lentiviruses into a host chromosome (Llano *et al.* 2009). In line with the reports by Ochs *et al.* (1994, 2000) and using recombinant DFS70 for the analysis of the ANA positive sera from healthy individuals by both Western blotting and ELISA, Watanabe *et al.* (2004) also found that the DFS pattern observed in IIF is due to the presence of autoantibodies against DFS70.
Further studies support the finding that DFS70 autoantibodies are preferentially found in individuals

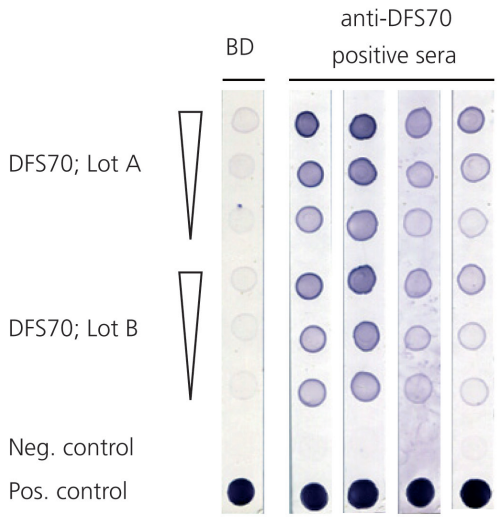

Figure: Immunodot analyses of increasing amounts of two different lots of recombinant DFS70 using sera from blood donors (BD) and sera known to be positive for anti-DFS70 autoantibodies.

lacking evidence for SARD (Dellavance *et al.* 2005; Miyara *et al.* 2013; Muro *et al.* 2008). Most importantly, reevaluating ANA-positive healthy individuals an average of 4 years after the initial evaluation, Mariz *et al.* (2011) reported that these individuals still lacked evidence for SARD and that the majority was still serologically positive for ANA.
Together with the evidence provided by several studies that the occurence of anti-DFS70 antibodies negatively correlates with the manifestation of SARD in the absence of other disease specific autoantibodies, DFS70 seems to be a valuable biomarker for excluding this type of disease (Fitch-Rogalsky *et al.* 2014; Mariz *et al.* 2011; Muro *et al.* 2008).

DIARECT's full length DFS70 is produced in the baculovirus/insect cell expression system.

References:
Dellavance *et al.* (2005) J Rheumatol. 32 (11): 2144-2149
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Mariz *et al.* (2011) Arthritis Rheum. 63 (1): 191-200
Miyara *et al.* (2013) Clin Dev Immunol. 2013: 703759
Muro *et al.* (2008) Lupus. 17 (3): 171-176
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Ochs *et al.* (2016) Clin Exp Med. 16(3): 273-293
Solomon *et al.* (2002) Arthritis Rheum. 47 (4): 434-444
Tan *et al.* (1997) Arthritis Rheum. 40 (9): 1601-1611
Watanabe *et al.* (2004) Arthritis Rheum. 50 (3): 892-900

Ordering Information		
30300	DFS70	0.1 mg
30301		1.0 mg

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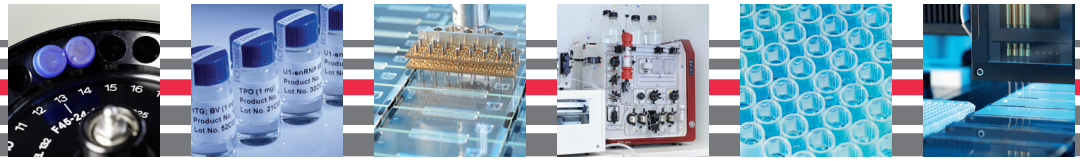

DIARECT GmbH · Bötzinger Str. 29 B · 79111 Freiburg · Germany
Tel. +49 (0) 761 47979-0 · Fax +49 (0) 761 47979-29 · orders-dia@bbisolutions.com · www.bbisolutions.com