PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Overexpression of specific autoantigens in scleroderma fibroblasts

ArticleInfo		
ArticleID	:	269
ArticleDOI	:	10.1186/ar-2002-76300
ArticleCitationID	:	76300
ArticleSequenceNumber	:	22
ArticleCategory	:	Paper Report
ArticleFirstPage	:	1
ArticleLastPage	:	3
ArticleHistory	:	RegistrationDate : 2002–3–14 Received : 2002–3–14 Accepted : 2002–3–20 OnlineDate : 2002–3–20
ArticleCopyright	:	Biomed Central Ltd2002

ArticleGrants	:	
ArticleContext	:	130754411

Oliver Distler,[Aff1]
Otylia Kowal-Bielecka,[Aff1]

Aff1 Center of Experimental Rheumatology, University Hospital Zurich, Switzerland and Department of Rheumatology, Medical Academy of Bialystok, Poland

Keywords

autoantibodies, cDNA microarray, Systemic sclerosis

Context

Systemic sclerosis (SSc) is a systemic disorder with small vessel vasculopathy and extensive accumulation of extracellular matrix proteins; in addition, a variety of autoantibodies to nuclear and nucleolar antigens can be detected. However, it is unclear whether these autoantibodies participate directly in the pathological manifestations of SSc and why, in particular, these autoantigens are targeted in autoimmune responses.

Significant findings

The gene expression profile of dermal fibroblasts from SSc patients and healthy controls was analysed using a 4000-element cDNA microarray (Research Genetics). Thirty-two genes showed significantly altered expression compared to controls, including the genes for several SSc-specific autoantigens (fibrillarin, centromeric protein B, centromeric autoantigen p27 and RNA polymerase II). The overexpression of the genes encoding these autoantigens in SSc fibroblasts, in comparison to healthy fibroblasts, was confirmed by quantitative real-time RT-PCR. In contrast, such differences were not found in muscle tissues and peripheral blood mononuclear cells (PBMC) from SSc patients, and in patients with other fibrosing diseases of the skin such as eosinophilic fasciitis and scleromyxedema.

Comments

The present study indicates that genes encoding autoantigens associated with SSc are selectively overexpressed in SSc dermal fibroblasts. These findings raise the interesting possibility that activated fibroblasts might be the cellular source of autoantigens, results in the characteristic profile of SSc-specific autoantibodies. However, the the current study does not address whether the increase of autoantigens at the mRNA level is accompanied by an increase at the protein level, and whether an increase in the level of gene/protein expression is sufficient to initiate a complex autoimmune reaction. Notably, the increased expression of a specific autoantigen gene was not associated with the detection of the corresponding autoantibodies in the individual patient. However, as stated by the authors, other important cell types in the pathogenesis of SSc, such as endothelial cells, have not been studied.

Methods

cDNA microarray, real-time PCR

References

1. Zhou X, Tan FK, Xiong M, Milewicz DM, Feghali CA, Fritzler MJ, Reveille JD, Arnett FC: Systemic sclerosis (scleroderma): specific autoantigen genes are selectively overexpressed in scleroderma fibroblasts. J Immunol. 2001, 167: 7126-7133.