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# Agonistic antibodies in systemic sclerosis

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## Highlights

- Agonistic antibodies activate pathways leading to tissue and vascular damage in SSc
- Anti-endothelial cells antibodies (AECA) can induce either apoptosis or activation
- Antibodies targeting specific PDGFRα epitopes can induce skin fibrosis *in vivo*
- Anti-AT1R/ETaR antibodies are associated with severe SSc vascular manifestations
- Anti-muscarinic-3 receptor (M3R) antibodies may cause gastrointestinal dysfunction

## Introduction

Systemic sclerosis (SSc) is characterized by microangiopathy, excessive fibrosis, and the presence of circulating autoantibodies to several cellular and extracellular components. The role of autoimmunity in generating the clinical and pathologic phenotypes in SSc has been long debated and is still matter of controversy. Distinct specificities of antinuclear antibodies (ANAs) are selectively detected in SSc patients and are associated with unique disease manifestations, but do not have a proven pathogenic role. A new group of autoantibodies reactive with cell surface receptors have been identified in SSc patients. They have been shown to directly activate pathways that may contribute to tissue and vascular damage. As such, they are proposed to have