

# CRO services for systemic sclerosis

**Systemic sclerosis (SSc)** is a chronic connective tissue disease of unknown cause and characterized by fibrosis of the skin and internal organs. In the late stages of SSc, most patients develop tissue fibrosis and organ dysfunction, which cause increased mortality. Symptomatic treatments of SSc are limited, and causal therapies are required.

**Bleomycin (BLM)-induced skin fibrosis model** is a well-characterized disease model for skin fibrosis and commonly used to study biological pathways of SSc. BLM-induced skin fibrosis model encompasses key pathophysiological features of SSc: epidermal hypertrophy and dermal fibrosis, which make this model attractive as an *in vivo* drug screening system.

**SMC**, a Tokyo-based biotech company also known as the leading nonclinical CRO for non-alcoholic steatohepatitis (NASH) and other fibrosis diseases, has re-validated murine BLM-induced skin fibrosis as a model translating non-clinical program into clinical practice. Our expertise in pharmacological studies is now experienced in SSc R&D.

## SMC's services in BLM-induced skin fibrosis model

### Animal:

- Female C57BL/6 mice

### BLM-induced skin fibrosis model:

- Induction of disease: the mice will be subcutaneously administered bleomycin.

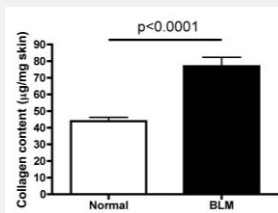
### Major endpoints:

- Dermal thickness (HE Staining)
- Dermal fibrosis (Masson's Trichrome Staining)
- Collagen content in skin (Sircol collagen assay)

### Additional endpoint:

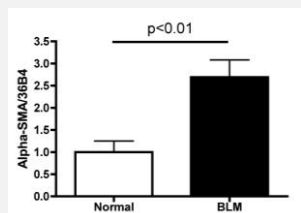
- Semi-quantitative RT-PCR for molecular markers

### Biological analysis (Collagen content in skin)



Mean±SD  
Normal n=10  
BLM n=10

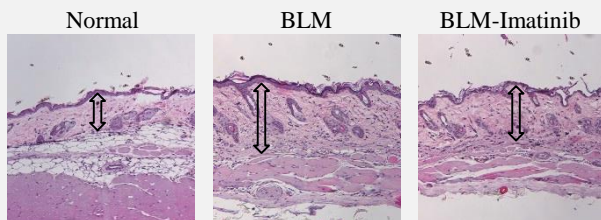
### Gene expression analysis (Alpha-SMA)



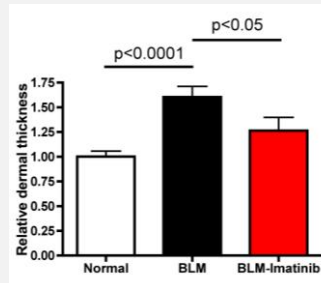
Mean±SD  
Normal n=10  
BLM n=10

## Histological analysis

### Dermal thickness



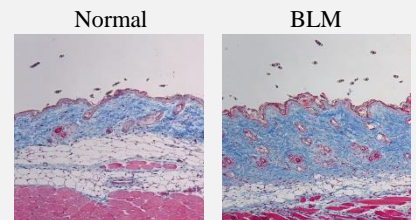
HE Staining (x100)    ⇄: Dermal thickness



Mean±SD  
Normal n=10, BLM n=10, BLM-Imatinib n=6

Imatinib significantly reduced the dermal thickness in BLM-induced skin fibrosis model.

### Dermal fibrosis



Masson's Trichrome Staining (x100)



For more information, please contact us below.

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