

# Mouse model for systemic sclerosis display sexual dimorphism

Valentina Biasin<sup>1,2</sup>, Petra Kotzbeck<sup>1</sup>, Ine Foessel<sup>1</sup>, Anna Birnhuber<sup>2</sup>, Leigh M. Marsh<sup>2</sup>,  
Andrea Olschewski<sup>2,3</sup>, Barbara Obermayer-Pietsch<sup>1</sup>, Grazyna Kwapiszewska<sup>2,4</sup>



Medical University of Graz

<https://lvr.lbg.ac.at/en>



Ludwig Boltzmann Institute  
Lung Vascular Research

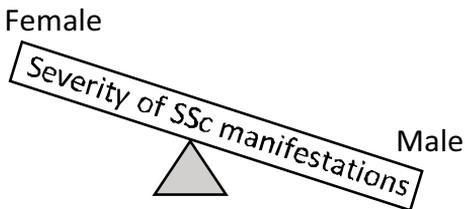
- Fra-2 TG mouse model is a model for Systemic sclerosis (SSc) with lung involvement:

<https://pubmed.ncbi.nlm.nih.gov/18641127/>

<https://pubmed.ncbi.nlm.nih.gov/24258247/>

- Summary of the Results:

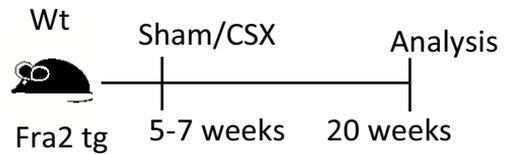
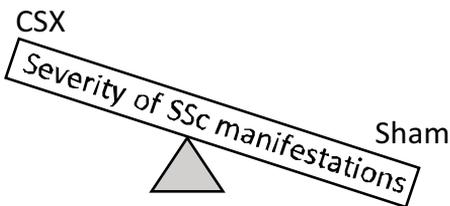
I. Fra-2 Tg female vs male mice



Severity of SSc manifestations:

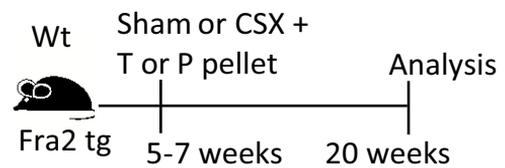
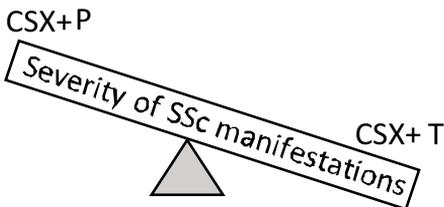
- ✓ Pulmonary hypertension
- ✓ Lung fibrosis and lung compliance
- ✓ Lung inflammation

II. Fra-2 Tg male mice



CSX: Castration

III. Fra-2 Tg male mice



T: Testosterone  
P: Placebo

- Conclusion and Outlook:

✓ Testosterone protects the male mice from lung involvement in SSc

✓ Open questions:

What is the effect of testosterone on lung parenchyma and vasculature?

Is testosterone the reason why SSc has higher prevalence on women?

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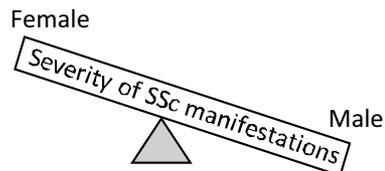
<sup>3</sup>Department of Experimental Anaesthesiology, Medical University of Graz, Graz, Austria,

<sup>4</sup>Otto Loewi Research Center, Division of Physiology



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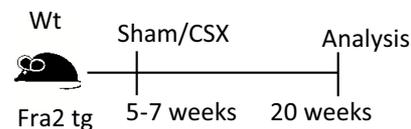
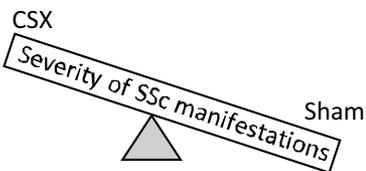
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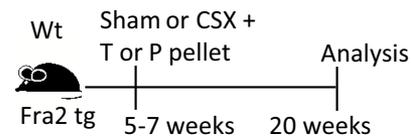
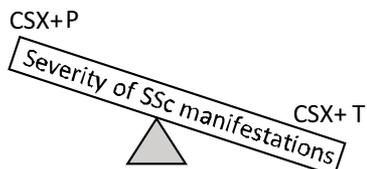
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