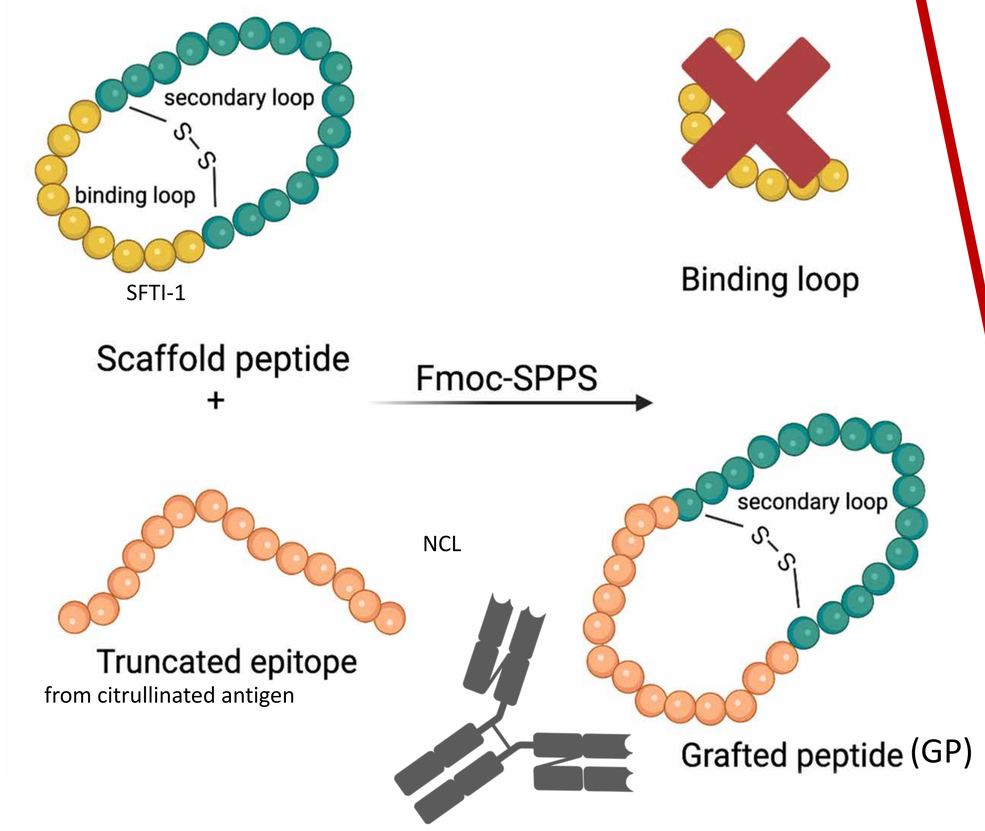
https://doi.org/10.17952/37EPS.2024.P2126

Designed Peptide based on Plant Original Cyclic Scaffold facilitate Rheumatoid Arthritis Diagnosis

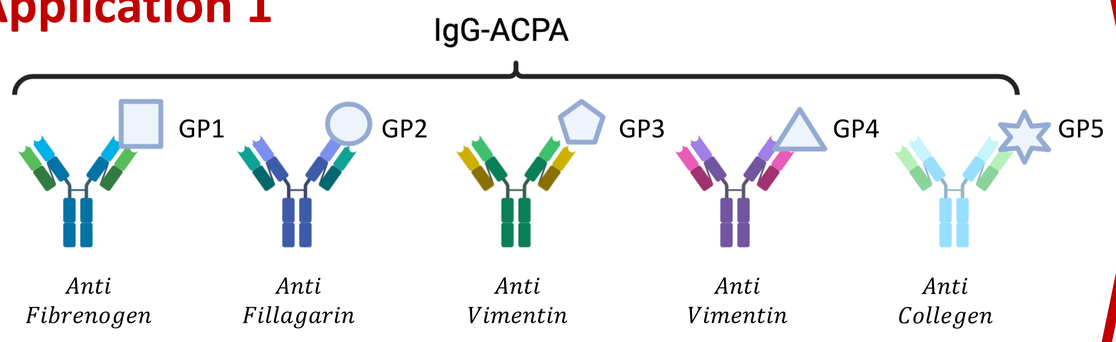
Mingshu Zhang,[1] Sunithi Gunasekera,[1] Liyan Mei,[2,3] Erik Jakobsson,[1] Camilla Eriksson,[1] Helena Idborg,[2] Per-JohanJakobsson,[2] Ulf Göransson[1]
[1]Department of Pharmaceutical Biosciences, Uppsala University, Uppsala, Sweden.
[2]Division of Rheumatology, Department of Medicine Solna & Karolinska University Hospital, Karolinska Institutet, Stockholm, Sweden.
[3]The Second Affiliated Hospital, Guangzhou University of Chinese Medicine (Guangdong Provincial Hospital of Chinese Medicine),Guangzhou, China.

- Plant based peptide scaffold SFTI-1 can sufficiently display various anti-citrullinated peptide autoantibody (ACPA) antigen epitopes, and present higher binding efficiency towards ACPAs.
- Grafted peptides (GP) are optimized as detection tool of ACPA for affinity purification and ELISA.
- ACPA fine-specificity profile differs between RA patients.
- Grafted peptides described can be used to screen large RA cohort.
- Physical and Functional characterization *in vivo* will help to understand correlation between fin-specificity and pathogenesis.

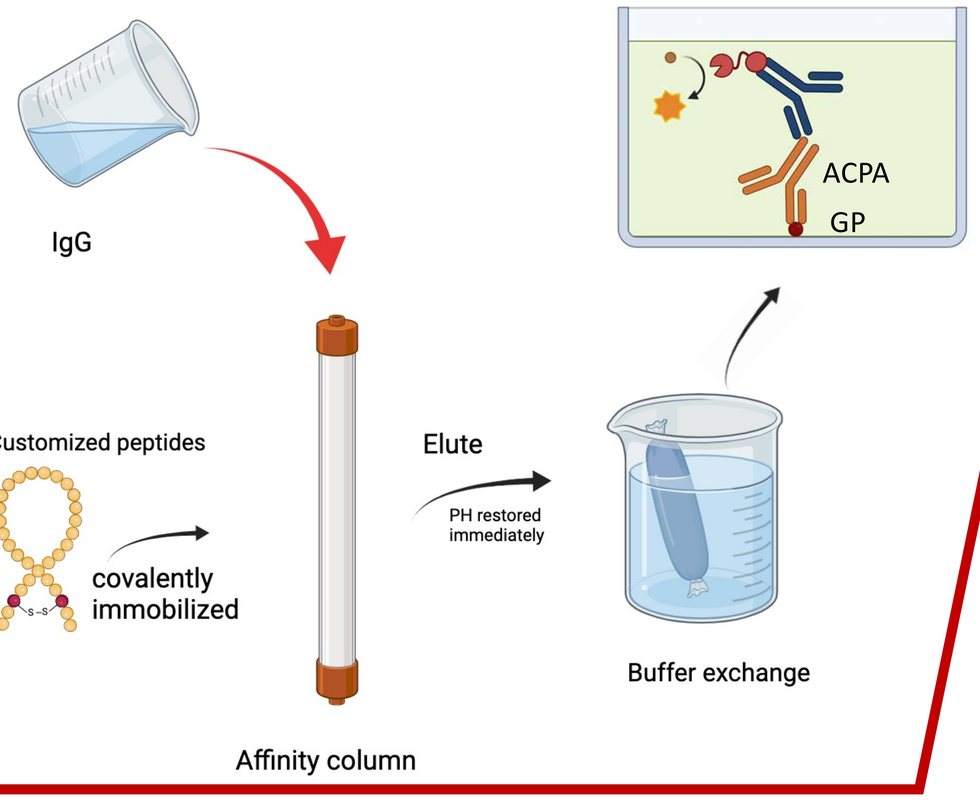
Study Design



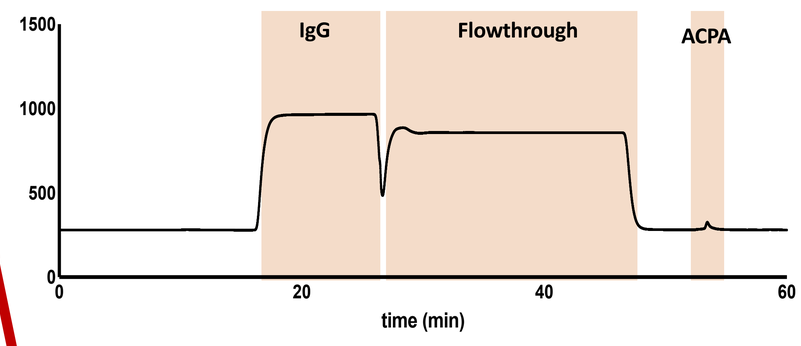
Application 1

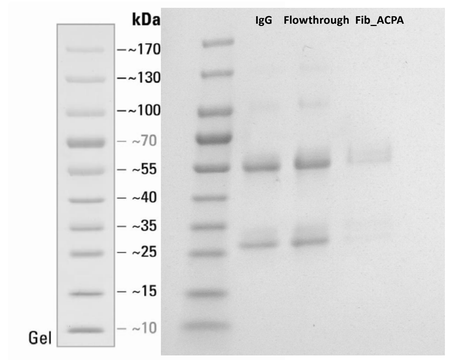


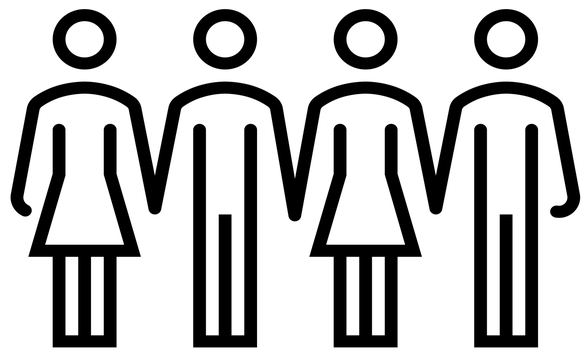
Application 2



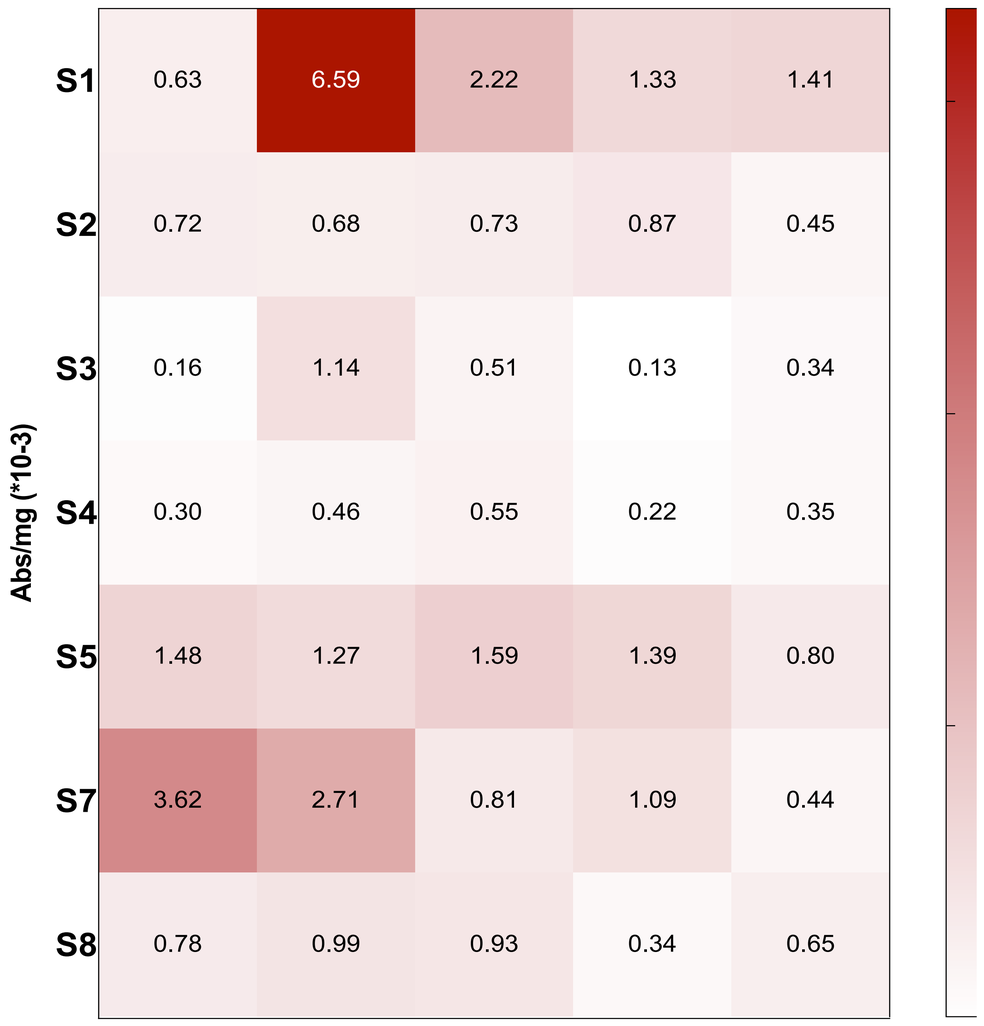
Fine-specific ACPA purification Chromatogram of ACPA purification and SDS-PAGE for IgG and Fib-ACPA







Individual ACPAs Fine-specificity Mapping indicates reactivity of individual IgG against designed antigen peptides.



Acknowledgement

✓ Supports from prof. Göransson, prof. Jakobsson and all the collegues working together with me.
✓ Sample collection from Rheumatology, Karolinska Institutet.