Aleksandra Fijałkowska, MD
Supervisor:
Prof. Anna Woźniacka, MD, PhD
Department of Dermatology and Venereology,
Medical University of Lodz
aleksandra.fijalkowska@stud.umed.lodz.pl

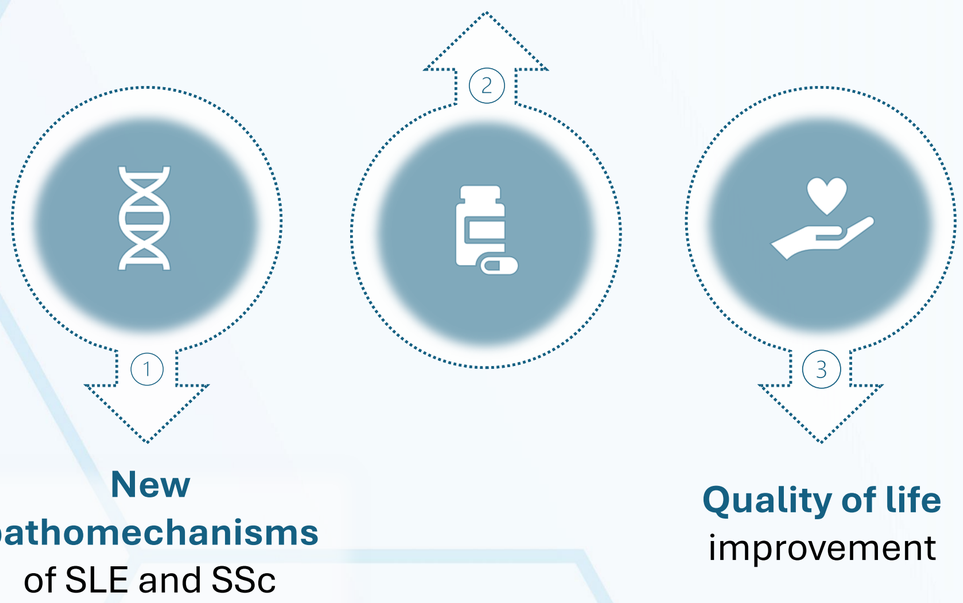
Assessment of the correlation between the expression level of selected GPCRs receptors, intercellular junction proteins and the immune profile in patients with systemic lupus erythematosus and systemic sclerosis with disease activity

Introduction

- Systemic lupus erythematosus (SLE) and systemic scleroderma (SSc) are connective tissue diseases (CTDs) with complex etiology.
- Their hallmark is increased production of antinuclear antibodies (ANA).
- Particular ANAs show high specificity against certain CTDs and are therefore of great diagnostic value.
- Circulating immune complexes stimulate chronic inflammation and induce multi-organ disorders.
- G protein-coupled receptors (GPCRs) are trans-membrane proteins that mediate the majority of cellular responses to external stimuli.
- Previous studies indicate the possible involvement of GPCR family proteins in the inflammatory response process.
- GPR35 protein is a well-established factor in cancer and inflammatory bowel disease.
- Tight junction proteins and adhesion proteins are important structural and functional components of vascular barriers.
- Abnormal expression of tight junction proteins and adhesion proteins disrupts vascular barrier function and subsequently induces inflammatory processes.

Aim of the study

New therapeutic strategies
in SLE and SSc



New pathomechanisms
of SLE and SSc

Quality of life
improvement

Acknowledgements

Special thanks to Mrs Marzena Kraska-Gacka for sharing the photos.

ANA fluorescence patterns

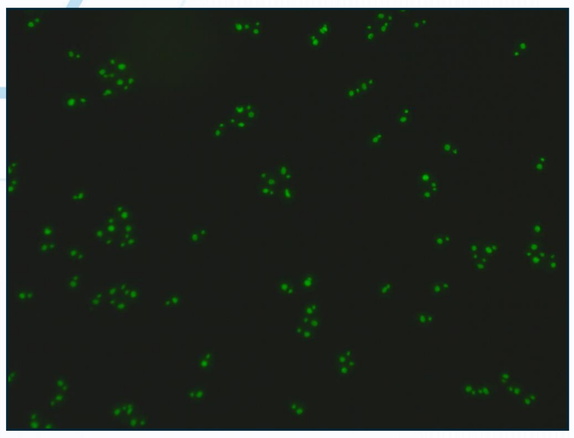


Fig.1. Anti-dsDNA antibodies; nucleolar pattern.

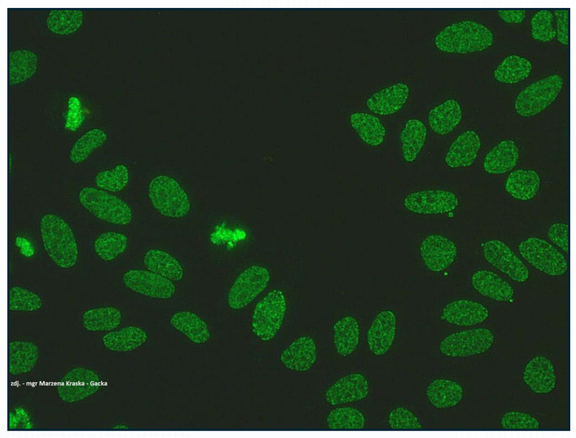


Fig. 2. Anti-DFS70 antibodies; dense fine speckled pattern.

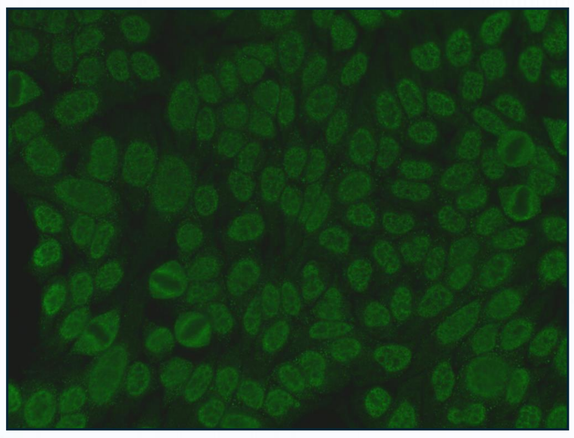


Fig. 3. Anti-RNP/Sm antibodies; speckled pattern.

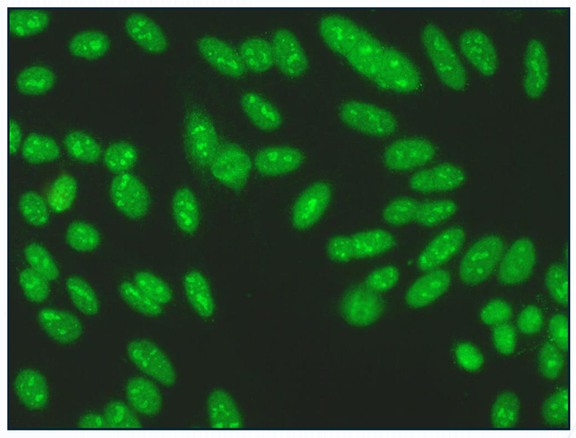


Fig. 4. Anti-Scl-70 antibodies; nucleolar and speckled pattern.

Materials and methods

- Research group: 50 patients with SLE and 30 patients with SSc.
- Control group: 100 healthy volunteers.
- SLE diagnosis based on ACR/EULAR 2019 classification criteria.
- SSc diagnosis based on ACR/EULAR 2013 classification criteria.
- The conditions for participation in the study will be: age over or equal to 18 years and the ability to give informed consent.
- Material: whole venous blood with a total volume of 30-35 ml and blood serum.
- Based on the blood collected, the following will be determined:
  - Various morphological and biochemical blood parameters.
  - The ANA titer and specification using the ELISA enzyme-linked immunosorbent assay.
  - The level of expression of GPCR proteins and intercellular junction proteins.
- The obtained results will be correlated with disease activity using the SLEDAI-2K scale in SLE and the Rodnan scale in SSc.