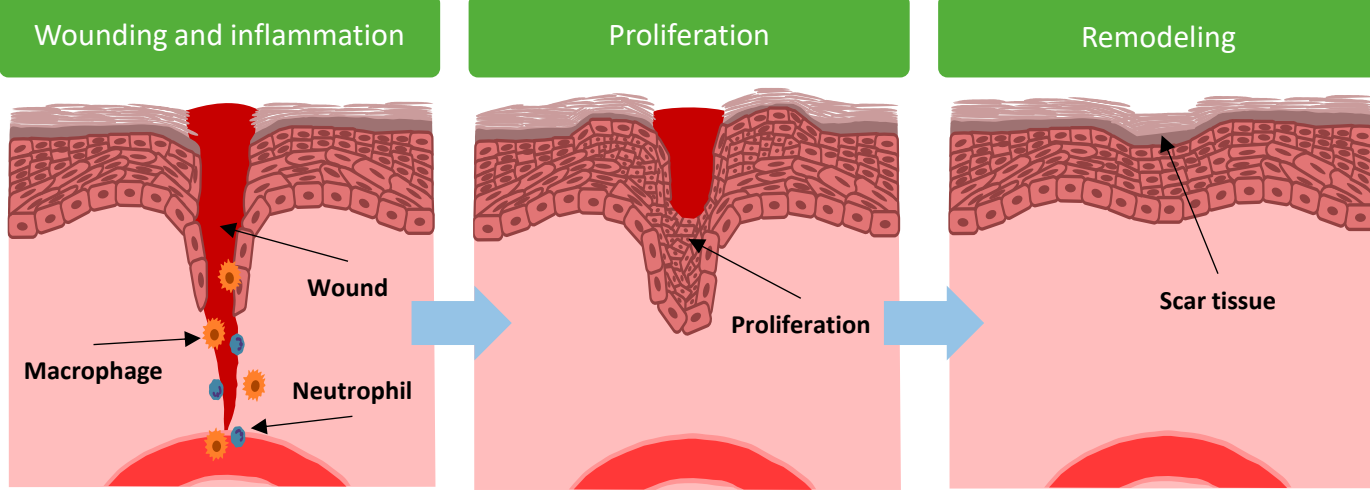


The Piezo1-ADAM axis modulates the inflammatory state of dermal keratinocytes via EGFR signaling

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Background

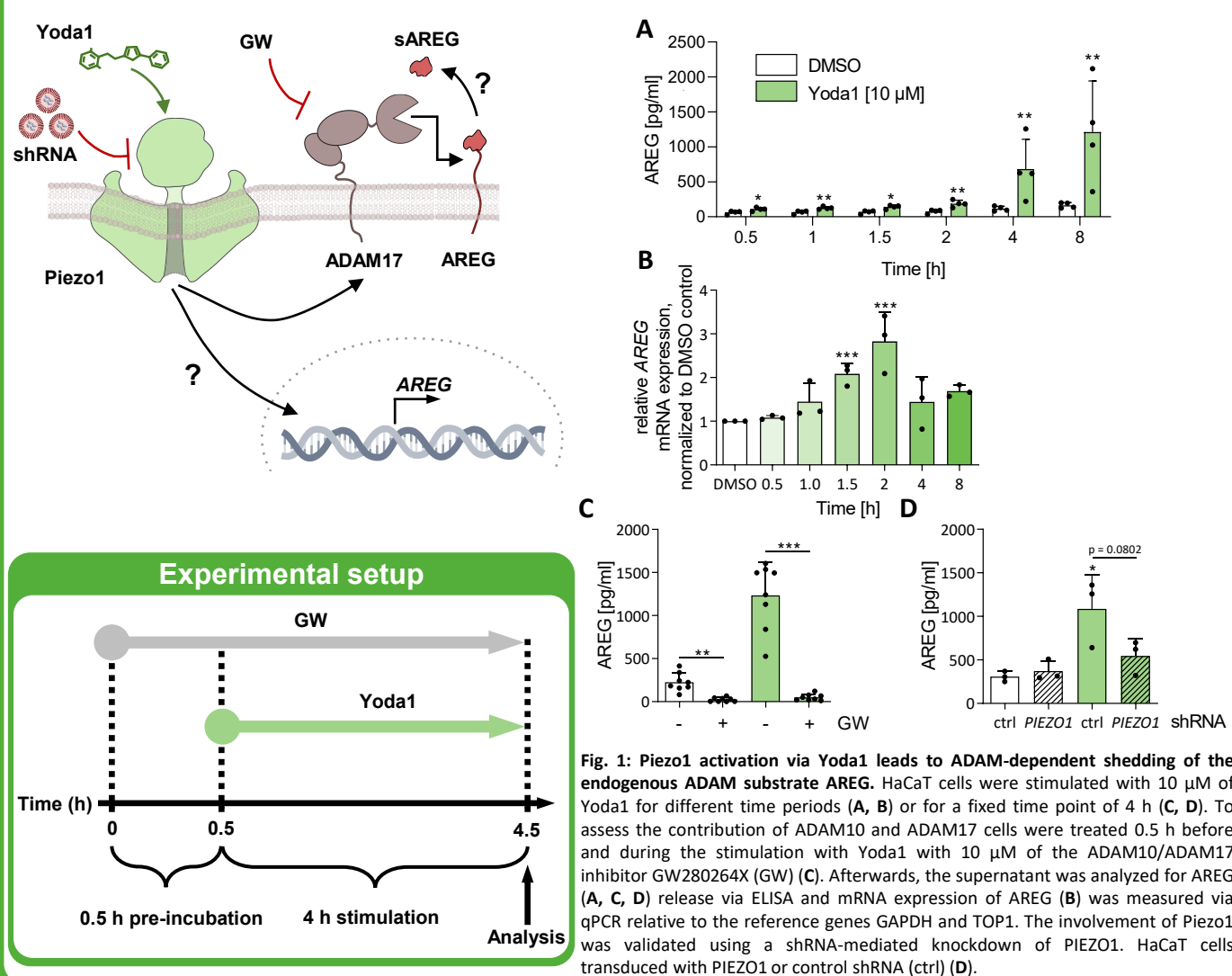


Aim

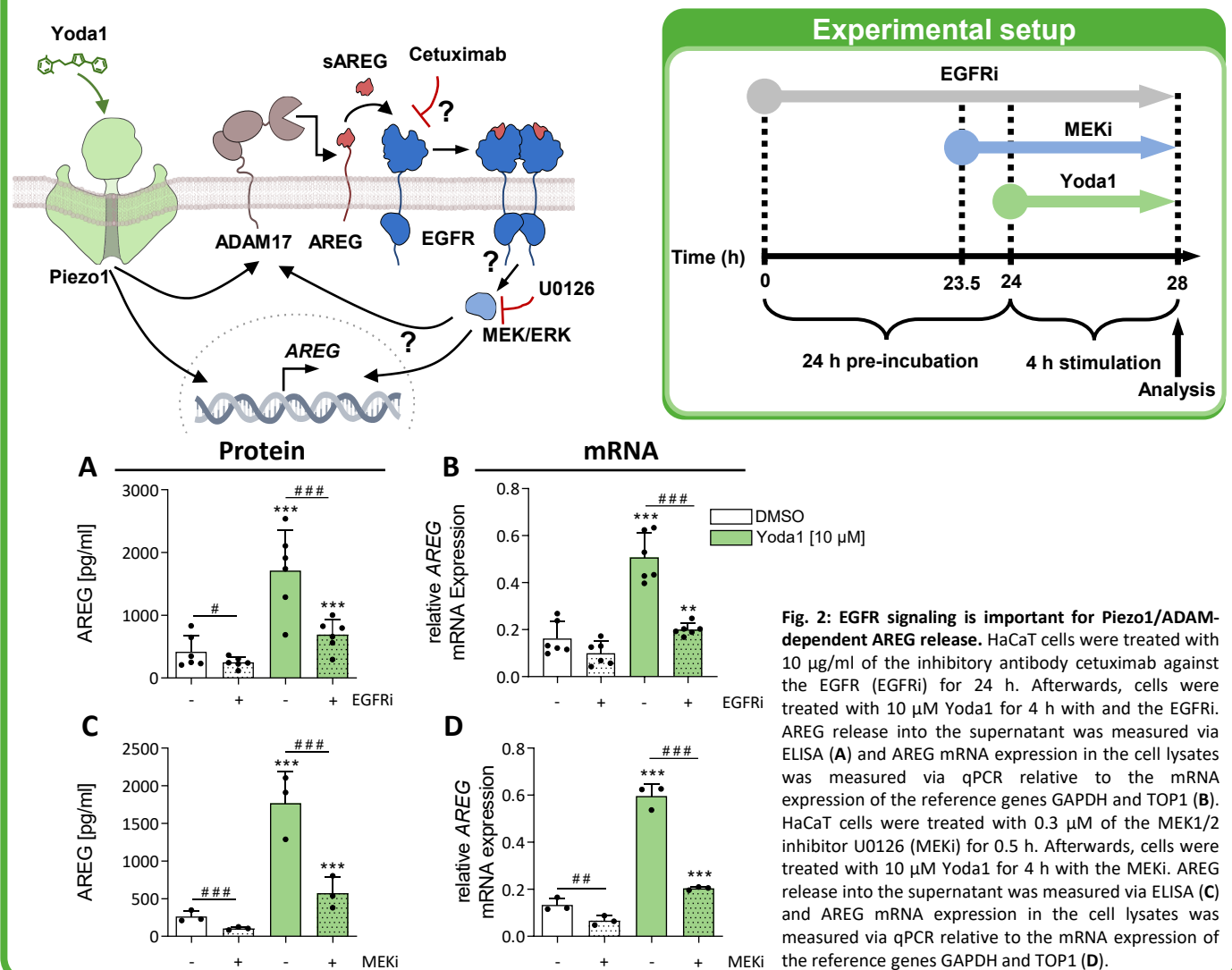
- Improve understanding of Piezo1-ADAM axis in dermal keratinocytes
- Investigate effects of auto- and paracrine signaling via EGFR
- Analyse the potential role of ADAM/EGFR signaling in IL-8 release
- Comparison of findings from Yoda1-mediated and physiological stimulation

Results

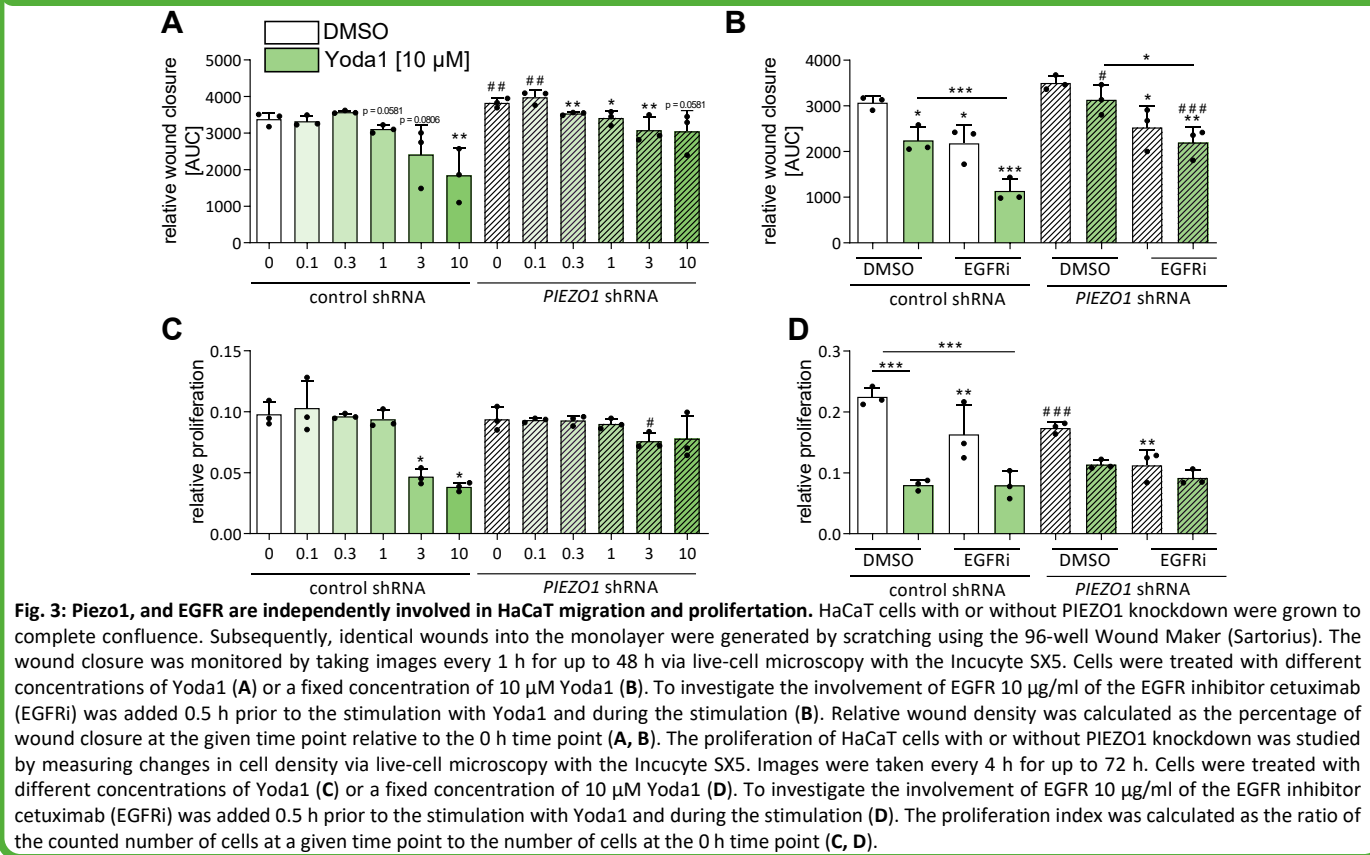
→ ADAM17 can be induced by chemical Piezo1 activation



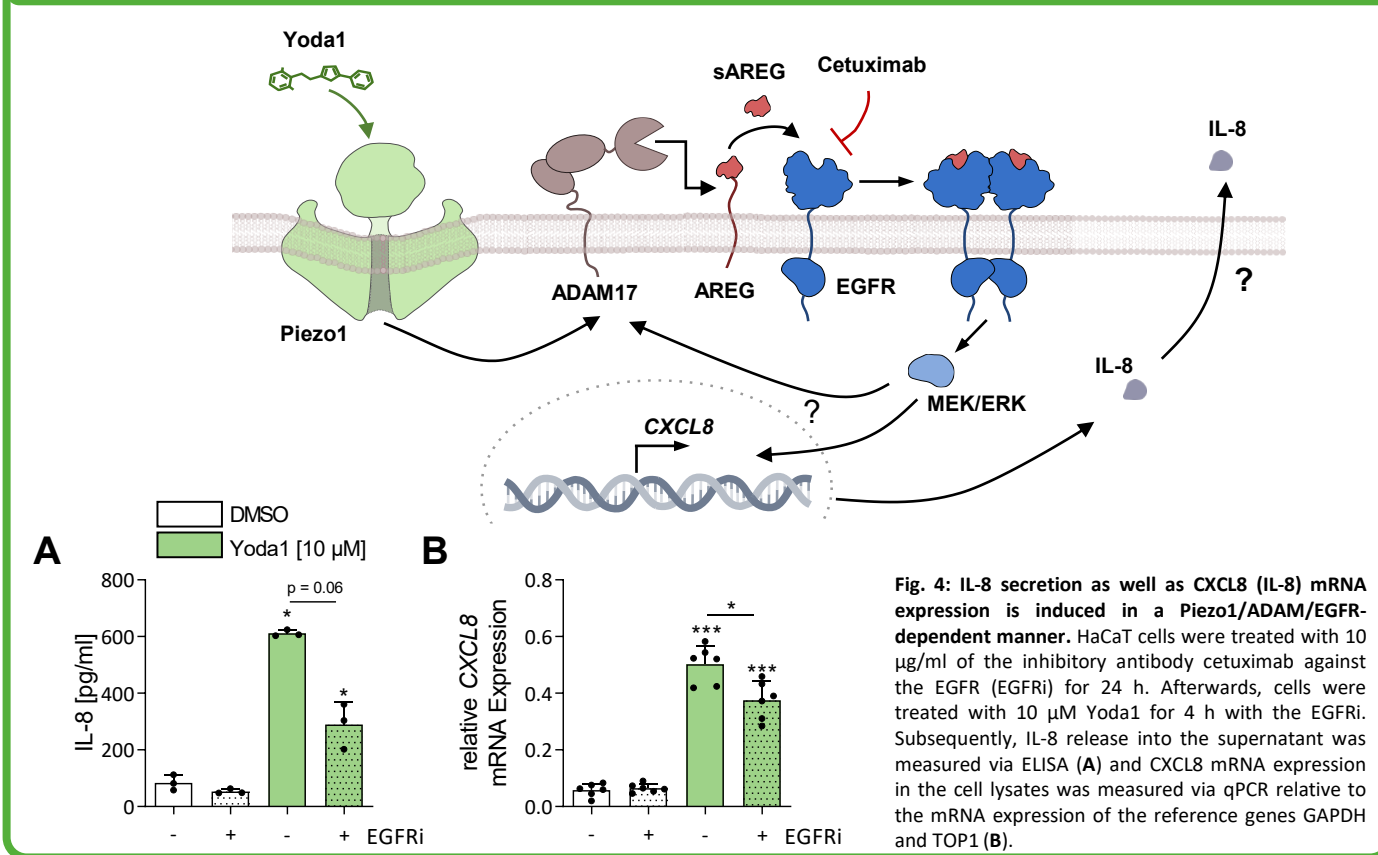
→ Yoda1-induced AREG release is EGFR-dependent



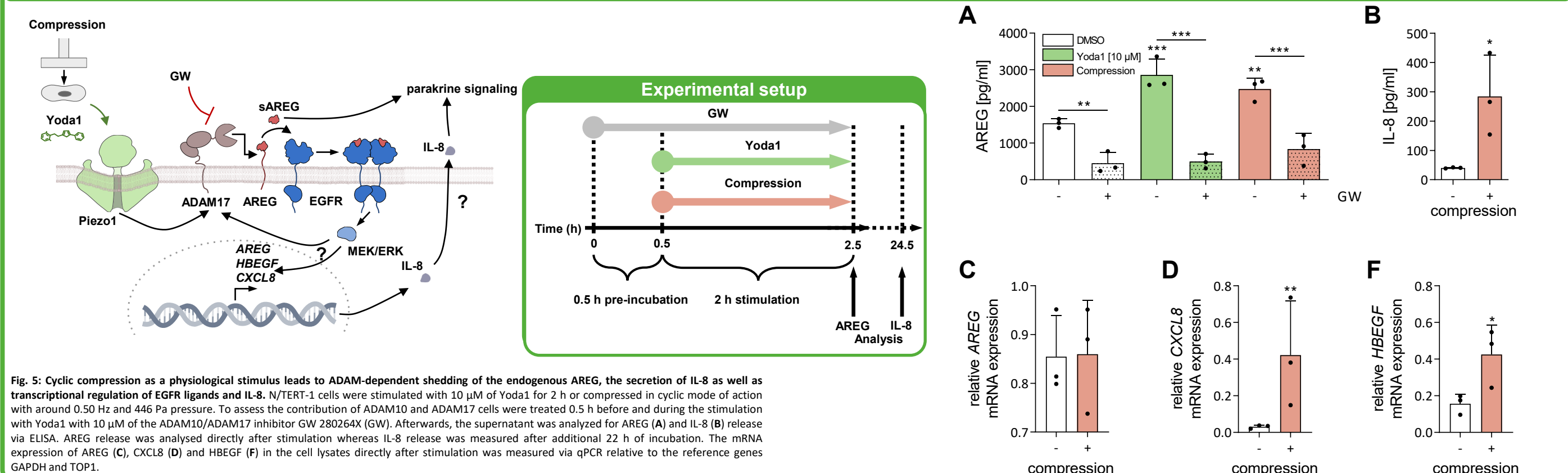
→ Stimulation of the ADAM/EGFR-axis impacts migration and proliferation



→ Yoda1 treatment induces ADAM/EGFR-dependent IL-8 release



→ Compression as a physiological stimulus shows similar results to Yoda1 stimulation



Conclusions

- Piezo1-ADAM-axis plays crucial role in dermal keratinocytes
- ADAM17-mediated shedding of EGFR ligands creates an EGFR-feedback loop
- Piezo1-ADAM-axis contributes to IL-8 secretion and neutrophil recruitment
- Validation of Yoda1-induced effects via mechanical compression

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