



Contribution ID: 148

Type: **not specified**

## **Influence of Charged Residues on the Membrane Insertion of Gasdermin-A3**

*Monday, November 28, 2022 1:30 PM (30 minutes)*

Gasdermins (GSDMs) execute a form of programmatic cell death, pyroptosis, by forming medium-sized membrane pores. GSDMA3, a variant native to mice, is involved in asthma, systemic sclerosis, alopecia, and inflammatory bowel disease. The exact pathway of GSDMs' pore formation remains a mystery, so we investigated the influence of charged amino acid residues on GSDMA3's membrane insertion process using both a monomer and a 7mer arc. Our results show that salt-bridge formation and protein surroundings reduce the energetic insertion cost dramatically, allowing spontaneous self-insertion. Monomeric gasdermin prefers the membrane-adsorbed over the membrane-inserted state, supporting the hypothesis of oligomers preassembling on the membrane surface before membrane penetration. Furthermore, the inserting oligomer can be small and does not have to comprise a full ring of approximately 26-30 subunits.

**Presenter:** KORN, Viktoria

**Session Classification:** Poster session