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Peptides that influence membrane topology

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We examine the mechanism of a range of polypeptides that influence membrane topology, including antimicrobial peptides, cell penetrating peptides, viral fusion peptides, and apoptosis proteins, and show how a combination of geometry, coordination chemistry, and soft matter physics can be used to approach a unified understanding. We will also show how such peptides can impact biomedical problems such as auto-immune diseases (psoriasis, lupus), infectious diseases (viral and bacterial infections), and mitochondrial pathologies (under-regulated apoptosis leads to neurodegenerative diseases whereas over-regulated apoptosis leads to cancer.)