

# Signaling by disorder in class 1 cytokine receptors

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## Video Byte

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# Abstract

Class 1 cytokine receptors, or C1CRs, are transmembrane proteins that facilitate communication between the inside and outside of cells. They orchestrate key processes such as proliferation, differentiation, immunity, and growth largely through long intracellular domains (ICDs) – forming C1CR-ICDs. A recent study shows that C1CR-ICDs share being fully disordered and brimming with short linear motifs, or SLiMs, which are compact amino acid sequences that mediate protein interactions. How can disorder govern this critical signaling capacity? Many of these SLiMs are overlapping, indicating a complex regulation of interactions. Together with a different amino composition compared to other IDPs, this enables the C1CR-ICDs to execute distinct functions. Thus, organizational and functional features are embedded within the disorder of the C1CR-ICDs but remain to be decoded. Further research should help scientists better understand how C1CR-ICDs direct complex cellular signaling pathways and advance this quickly growing field of study.