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LL37-DNA complexes and auto-immune diseases FAN JIN, University of California, Los Angeles, LORI K. SANDERS, University of Illinois, Urbana -Champaign, WUJING XIAN, University of California, Los Angeles, MICHEL GILLIET, University of Texas, Houston, GERARD C. L. WONG, University of California, Los Angeles, DEPARTMENT OF IMMUNOLOGY, UNIVERSITY OF TEXAS, HOUSTON COLLABORATION — LL37 is an alpha-helical host defense peptide in humans. Recent work has shown that Toll-like receptor-9 (TLR9), an intracellular receptor in plasmacytoid dendritic cells (pDCs) of the immune system that normally responds to pathogen nucleic acids, can be pathologically triggered by self DNA in the form of DNA-LL37 complexes. Synchrotron small-angle x-ray scattering (SAXS) measurements reveal an unanticipated form of self-assembly between DNA and this positively charged macroion. We examine the generality of this with other macroions, and propose a new geometric criterion for immune cell activation.

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