



Irina Panina is a researcher affiliated with the Laboratory of Biomolecular Computer Design at the Research Institute for Systems Biology and with the Laboratory of Biomolecular Modeling at the Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry RAS in Moscow. She specializes in the computer simulation of biological macromolecules, exploring how molecular structure, conformational dynamics, and membrane environments shape biological recognition and activity.

A central theme of Irina's research is the molecular basis of antimicrobial action. Using molecular dynamics simulations, this work explores how lantibiotic peptides recognize lipid II, a bacterial cell-wall precursor, and how the membrane environment influences this interaction. Additional research areas include lipid and protein substrate recognition, the conformational dynamics of soluble

and membrane proteins, and the membrane interactions of photosensitizing antiviral compounds. Over the past ten years (2017–2026), Irina Panina has co-authored 16 distinct journal publications spanning antimicrobial peptide–target recognition, structural investigations combining cryo-electron microscopy and computational approaches, antiviral photosensitizers, and enzyme regulation.

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