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Models of Bacterial Membranes: From Simple to Less So

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Early models of the gram-negative bacterial membrane tended to focus on replicating the negative charge of the system. This approach was rather simplistic and didn't consider either the overall structural or molecular complexity of the membrane. In recent years, while the structural complexity is still challenging, progress has been made at increasing the molecular complexity of model systems. This presentation will take a brief journey from Langmuir monolayers through supported, floating and tethered lipid bilayer systems where journey from simple charged phospholipids such as DPPC to various versions of Lipopolysaccharides (LPS) will be outlined. Finally examples of a tethered bilayer model will be presented, demonstrating the synergistic impact of gold nanoparticles and a 'last resort' antibiotic on LPS/PC mixed model membranes.

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