

Publication

The wild-type flagellar filament of the Firmicute Kurthia at 2.8 Å resolution in vivo

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Bacteria swim and swarm by rotating the micrometers long, helical filaments of their flagella. They change direction by reversing their flagellar rotation, which switches the handedness of the filament's supercoil. So far, all studied functional filaments are composed of a mixture of L- and R-state flagellin monomers. Here we show in a study of the wild type Firmicute Kurthia sp., that curved, functional filaments can adopt a conformation in vivo that is closely related to a uniform, all-L-state. This sheds additional light on transitions of the flagellar supercoil and uniquely reveals the atomic structure of a wild-type flagellar filament in vivo, including six residues showing clearly densities of O-linked glycosylation.

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