



Figure: TLP-4b consists of linear tetrapeptide repeats coated with dense glycans. (A) High-resolution 3D reconstruction of TLP-4b with helical parameters. Left: Two perpendicular views of segmented TLP-4a and the corresponding 2D average. Right: Two adjacent asymmetric units. The two units are colored pink and light blue. The helical rise and twist for TLP-4b are 12.4 Å and 138.6°, respectively. The overall resolution is 3.3 Å. The EM map is contoured at 4.5 Å. (B) Three glycan branches of TLP-4b. *Upper:* Each helical repeat of TLP-4b has three branches of glycan densities linked to the central peptide. *Lower:* Glycan 1 and 2 are O-linked to a 3,4-dihydroxyproline (diHyp) residue, while the neighboring glycosylated residue can be a Thr/Ser. The EM map is contoured at 9 Å. All structural figures were prepared in ChimeraX.

The protein sequence pattern of this glycofibril is similar to that of the recently observed TLP-4, although the glycan chains are different. The authors rename the previously characterized glycofibril as TLP-4a and this one as TLP-4b. The present findings reveal the critical role of glycans in the structural folding of glycoconjugates and shed light on understanding the carbon/nitrogen ratio in biospheres.

Category

1. News