

Fig. S1. MreB and YFP-MreB expression levels.

Western blot comparing levels of MreB and YFP-MreB in uninduced (-IPTG) and induced (+IPTG) MC1000/pLE6 and MC1000/pLE7 cells. After two hours of induction the level of WT MreB (MC1000/pLE6) and YFP-MreB (MC1000/pLE7) are comparable at a 5 to 6-fold increase. Lanes were equally loaded with cell lysate based on the OD⁶⁰⁰ at the time of harvesting.

Movie S1. Electron Cryotomography

Three-dimensional reconstructions of four cells are shown as a series of XY slices through the tomograms. Shown first is a cell hyper-overexpressing YFP-MreB, whose numerous filaments are clearly visible. Second, is a cell overexpressing YFP-MreB at a lower level (similar to those shown in previous literature), exhibiting a few helical filaments. Third, a cell overexpressing native MreB (without the YFP tag) is shown, in which no filaments were seen, showing the filaments are an artifact of YFP fusion. Finally, strain FB76, which harbors the functional MreB-mCherry sandwich fusion is visualized, showing that the additional mass of the tag is not responsible for seeing the filaments.

Movie S2. Fluorescence Microscopy

This movie shows two focal stacks each through fields of cells overexpressing YFP-MreB (MC1000/pLE7) and cells expressing the MreB-mCherry sandwich fusion (FB76). Cells overexpressing YFP-MreB display helical as well as straight filamentous fluorescence. FB76 cells display a disconnected "patchy" fluorescence distribution.