

**Fig. S1.** Comparison of the *ab initio* model and the experimentally determined x-ray structure for LacY. The x-ray structure (1PV7), as determined in reference 28 in the text, is displayed on *top*, the *ab initio* model in the *middle*, and a comparison of both structures at the *bottom*. The NH<sub>2</sub>-terminal helix is shown in dark blue and the COOH-terminal helix in red. Structures were displayed using the program PyMOL.