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Supporting Information

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for

Orientation of the Monomeric Porin OmpG in Planar Lipid Bilayers

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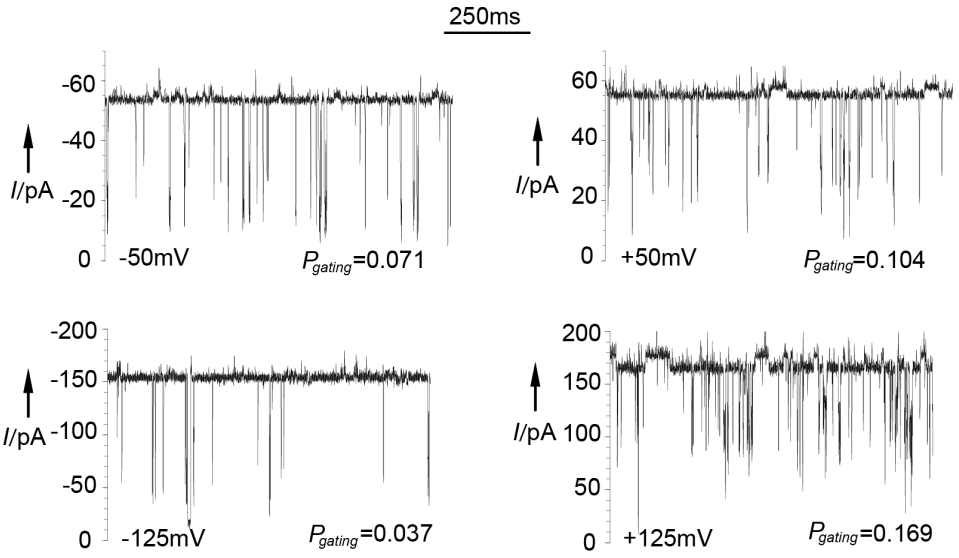

Figure S1: Single channel recordings of a wild-type OmpG pore in the Q^-/N^+ orientation. Typical current traces from a single WT OmpG pore at various applied potentials. The buffer was 10 mM Tris·HCl, pH 8.5, 1 M KCl. The P_{gating} values, calculated as the time a pore resides in a closed (zero current) or partially closed state (current smaller than that of the fully open state) divided by the total recording time, is noted. The pore exhibits an asymmetric gating pattern. As indicated by the P_{gating} values, the gating level at a positive potential is higher than that at a negative one. The current of the fully open state at positive potentials is slightly greater than that at negative potentials.

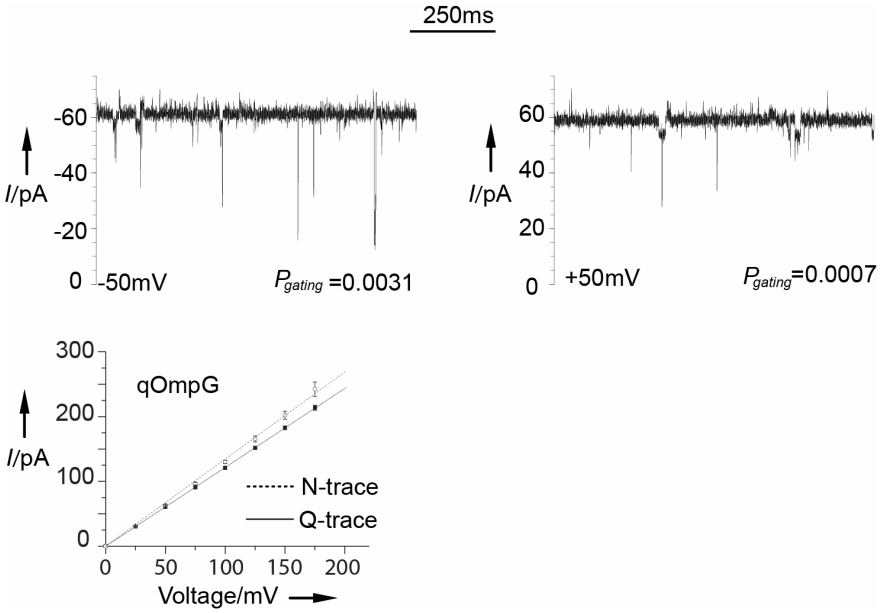

Figure S2: Single channel recordings of a qOmpG pore. A) Typical Q-traces (1 s) for a qOmpG pore in the Q^+/N^- orientation are displayed. Each chamber contained 10 mM Tris.HCl, pH 8.5, 1 M KCl. The applied potentials were ±50 mV. B) I-V curves of the Q-traces and N-traces of qOmpG proteins. Current-voltage relationship of Q-traces (solid lines) and N-traces (dashed lines) are shown. The buffer used was 10 mM Tris.HCl, pH 8.5, 1 M KCl. The data represent the mean values from three independent pores. The bars show the standard deviations.

OmpG loops:

Loop1: NVEGYEDMD

Loop2: DYSAGK

Loop3: HYVDEPGKDT

Loop4: FANDLNTTGY

Loop5: FNMDDSRNNGEE

Loop6: NWDWQDDIERE

Loop7: HDEGDSD

Figure S3: Sequences of the OmpG loops. The loop structures are defined based on the 3-D crystal structure 2IWV (Yildiz, O. et al. *EMBO J.* **2006**, *25*(15):3702-3713). The positively charged residues are colored in blue, the negative ones in red.