

## Description of Additional Supplementary Files

**File name:** Supplementary Movie 1

**Description:** Morph movie (side view) of the conformational change between holo PefR and apo PefR-DNA complex.

**File name:** Supplementary Movie 2

**Description:** Morph movie (top view) of the conformational change between holo PefR and apo PefR-DNA complex.

**File name:** Supplementary Data 1

**Description:** Supplementary Data 1: All source data underlying Figures. Each data was separated on sheets of the Excel file.

**File name:** Supplementary Data2

**Description:** DNA (A) and protein (B) sequences of PefR, oligo primer sequences (C) and DNA sequencing data (D) for the site-directed mutagenesis. Sequences of (A)-(C) were summarized in the first sheet, (D) was separated from the second sheet by each DNA sequencing.