

1 **Significance of a Post-translational Modification of the PilA Protein of *Geobacter***
2 ***sulfurreducens* for Surface Attachment, Biofilm Formation and Growth on Insoluble**
3 **Extracellular Electron Acceptors**

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5 **Supporting Information**

6 Contains Figures S1 & S2.

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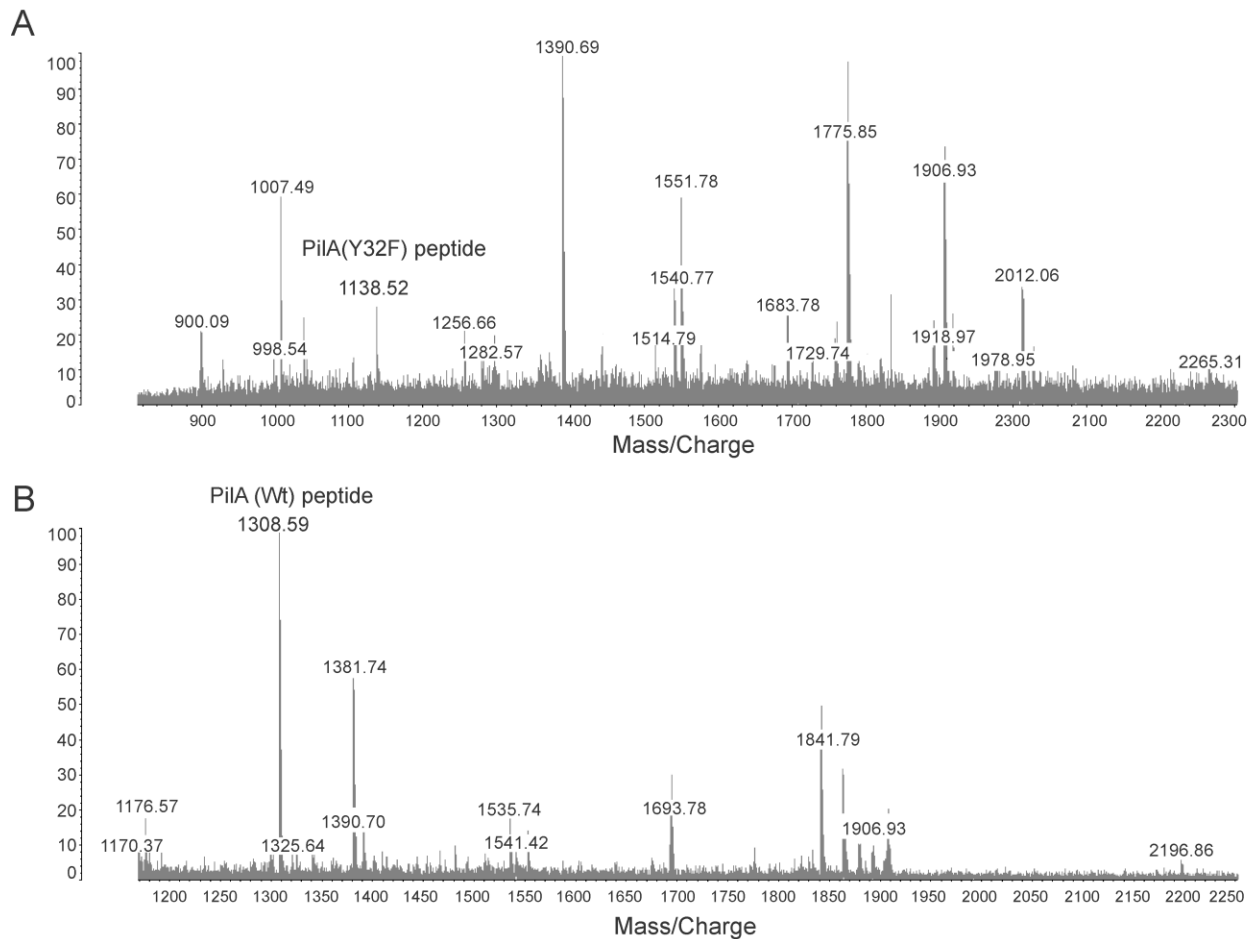
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29 **FIG. S1. Comparison of Matrix-Associated Laser Desorption/Ionization (MALDI) mass**

30 **spectrometric data observed after tryptic digest of the secreted PilA(Y32F) and PilA(Wt)**

31 **proteins.** The samples also contain tryptic peptides of other co-eluted proteins of 7 kDa size.

32 One peptide of PilA(Y32F) is observed at 1138 Da that is consistent with the molecular weight of

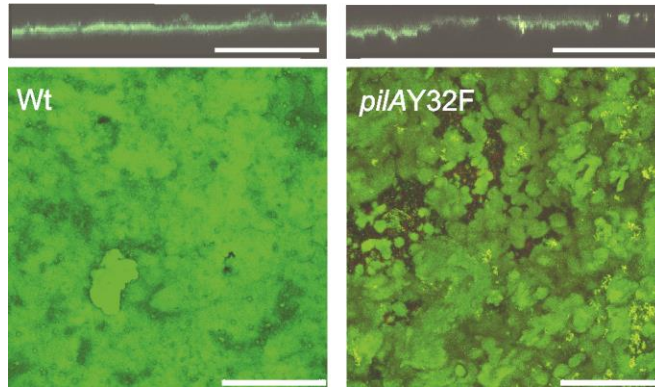
33 the (AFNSAASSDLR) peptide containing an unmodified phenylalanine-32 (Panel A); whereas

34 the corresponding peptide from the PilA(Wt) protein is observed at 1308 Da which is equivalent

35 to a combined mass of a 1154 Da for the (AYNSAASSDLR) peptide and a glycerophosphate

36 group (154 Da) (Panel B).

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40 **FIG. S2. Confocal laser scanning micrographs of biofilms formed with the DL100 (Wt) and**

41 ***pilAY32F* mutant strains on graphite anodes in microbial fuel cells.** Cross-sectional (top) and

42 top-down (bottom) views are shown. Bacterial biofilms were imaged after producing maximum

43 current for 3 days (day 7 for Wt and day 19 for *pilAY32F*). The substratum surface coverage was

44 67% for the wild-type and 52% for the mutant. The maximum pillar heights were 55.00 μm for

45 the wild-type and 50.00 μm for the mutant. The deviation of height (roughness) across the

46 biofilm was 0.26 ± 0.1 and 0.27 ± 0.1 for the wild-type and mutant respectively; values are

47 averages of triplicate samples \pm the standard deviation. Scale bars, 250 μm .

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