

Supplementary information submitted to Scientific Reports

**Gene products and processes contributing to lanthanide homeostasis and methanol metabolism in *Methylobacterium extorquens* AM1**

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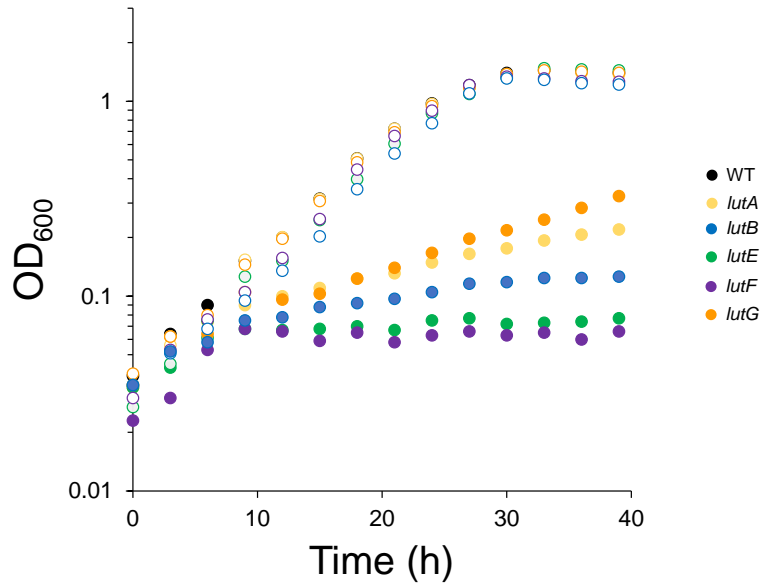
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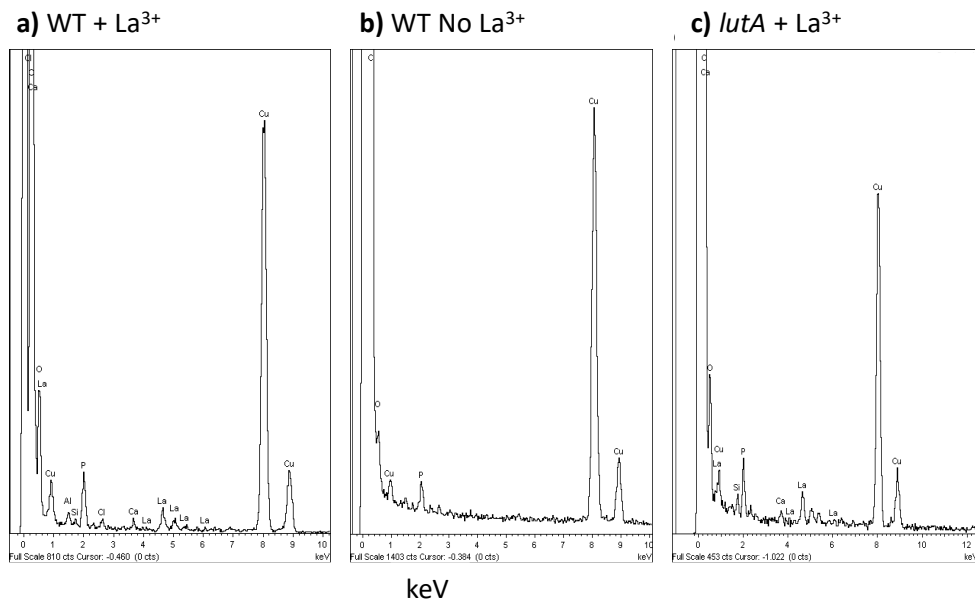
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**Fig S1. Complementation studies for the *lut* mutant strains.** Graphs depict representative data from biological triplicates grown in methanol media (125 mM) containing 2  $\mu$ M LaCl<sub>3</sub> and 5  $\mu$ g/mL Tc. Filled circles represent wild type (WT) and mutant strains carrying the pCM62 empty vector. Empty circles represent each mutant strain with the respective gene cloned into pCM62.



**Fig S2. Elemental analysis of cytoplasmic deposits.** Whole spectra of energy-dispersive X-ray analysis of the electron-dense deposits observed in the (a) cytoplasm of the wild-type (WT) strain grown with 20  $\mu\text{M}$   $\text{LaCl}_3$  (b) cytoplasm of the wild-type strain grown without  $\text{LaCl}_3$  and (c) periplasm of the *lutA* mutant strain grown with 20  $\mu\text{M}$   $\text{LaCl}_3$ . Microscopic images of these samples are depicted in Fig. 6 panels c and g and Fig. 7 panel f, respectively. Copper, carbon and silicon ion content is a result of these metals being present in the grids.