Marine sulfate-reducing bacteria cause serious corrosion of iron under electroconductive biogenic mineral crust

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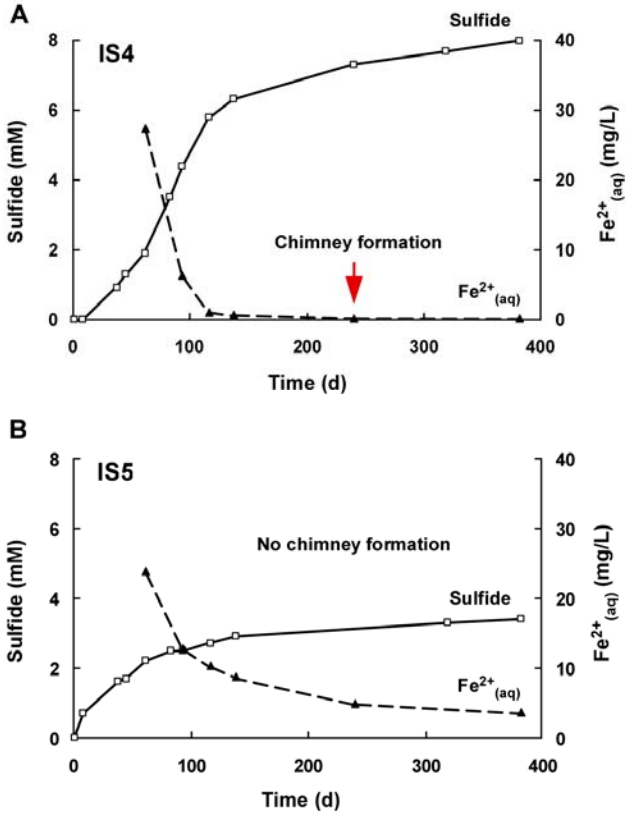

Fig. S10. Sulfide production (determined as sulfate consumption) and decrease of dissolved ferrous iron due to carbonate precipitation in long-term incubations of corrosive SRB. Strain IS4 (**A**) which was more alkali-tolerant than strain IS5 (**B**) grew up to higher *pH* [*pH* increase due to equation (5)] thus promoting precipitation according to $Fe^{2+} + HO^- + HCO_3^- \rightarrow FeCO_3 + H_2O$. This favored formation of micro-chimneys (Fig. 5C). Six cultures of each strain were incubated in parallel and sacrificed at different time points for SEM analysis (Fig. 4, Figs S6 to 8). Formation of crater- and chimney-like structures in cultures of strain IS4 coincided with the drop of $[Fe^{2+}_{(aq)}]$ below detection limit (0.2 mg/l). The initial *pH* was 7.3. Strain IS4 reached *pH* ≈ 9. Activity of strain IS5 ceased at *pH* ≈ 8.