**Metabolic diversity of hyperalkaliphilic microbial communities associated with serpentinization at The Cedars**

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The Cedars, in northern California, is an active site of subsurface serpentinization. The spring waters that emerge from this system feature extremely high pH (pH=11-12), low redox potential (Eₜ=-600 mV), low salinity, relatively rich in calcium and lack of obvious electron acceptors and carbon sources, making it an exceptionally challenging environment for life. Geochemical studies of The Cedars revealed that the site has two different serpentinizing water sources: a deep source that interacts with the peridotite body as well as the km-deep marine sediments, and a shallow source that interacts only with the overlying peridotite. Meanwhile, BS5, fed mostly by a shallow source, was populated by hydrogen-driven Proteobacteria, in particular Serpentinomonas spp. Those findings indicated that harsh highly-alkaline geological settings support diverse microbial metabolic strategies.

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