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Title:	Rock pores as protocells: CO ₂ fixation on serpentinite
Authors:	Raj T R, Amal
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Abstract:	This study investigates CO ₂ fixation within serpentinite rock pores utilising a pressurised reactor with a mixture of CO ₂ and H ₂ at pressures ranging from 10 to 35 bars to emulate conditions potentially akin to serpentinising systems found in icy moons and hydrothermal vents. Our study documents the abiotic synthesis of acetate, formate, methanol, and potentially methane, thereby highlighting the catalytic potential of natural serpentinite in the production of prebiotic organic molecules. Our findings suggest that such geological environments, encompassing both alkaline and acidic hydrothermal conditions, may serve as plausible settings for the emergence of metabolic processes. Further research into the role of nano-porosity and the discovery of novel self-sustaining autocatalytic networks is needed.
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