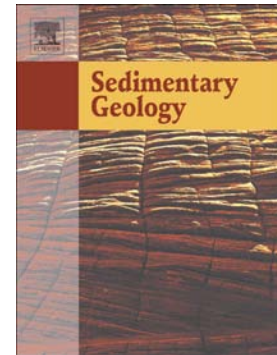


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Origins of carbonate spherulites: Implications for Brazilian Aptian Pre-Salt Reservoir

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Origins of carbonate spherulites: Implications for Brazilian Aptian Pre-Salt Reservoir.

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Spherulites, spherical to elliptical allochems composed of crystals radiating from a common core, investigated from a variety of depositional settings, e.g., hot springs, ambient water temperature geyser, tufa, and caliche, are all composed of a fine-grained nucleus made-up of carbonate encrusted bacterial bodies, biofilms, and/or EPS and surrounded by a cortex of radiating crystals of either aragonite or calcite. The microbes and their by-products in the nucleus induced the precipitation of carbonate, overcoming the inhibition to initiate crystal formation. The enveloping radiating crystals comprising aragonitic cortices tended to grow abiotically producing well-formed euhedral crystals with a paucity of included bacterial fossils. Whereas those cortical crystals made-up of calcite commonly contained bacterial fossils, indicating that the bacterial colonies contributed to the calcitic cortical crystal precipitation. Similar spherulites form a thick, widespread accumulation in the Aptian Pre-Salt lacustrine deposits in the Campos Basin, offshore Brazil. As with the travertine, tufa, and caliche spherulites, the Pre-Salt spherulites

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