

Microbial carbonates: processes and products of organomineralization in marine and non marine settings

[Seminario](#)

Data: Thursday, 24 March, 2011 - 15:00

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Abstract:

L'invito è come sempre rivolto a chi avesse il piacere di partecipare e a tutti gli studenti che debbano ancora cumulare i crediti seminariali.

Microbial carbonates are defined as organosedimentary deposits accumulating as a result of benthic microbial communities trapping and binding sediments and/or forming the locus of mineral precipitation.

Such carbonate precipitation is promoted either by active bacterial metabolism, i.e. photosynthesis and sulphate reduction (biologically induced organomineralization) or by the presence of degrading biofilms that act as organic substrate for carbonate mineralization (biologically influenced organomineralization). Carbonate precipitation is not only controlled by the microbial community but also by the physico-chemical properties of the precipitating fluid (e.g. pH, temperature, carbonate alkalinity and saturation state with respect to carbonate minerals).

Microbial carbonates played a fundamental role in the Precambrian and Phanerozoic geologic record forming hundred of meters thick successions and kilometers wide carbonate platforms. Carbonate platform margins built by microbial boundstone dominated during times following extinction events such as late Devonian to Permian, Triassic and Jurassic. However, limited information is available about microbial carbonate fabrics, environmental and chemical parameters promoting microbially mediated precipitation and microbial processes inducing precipitation of calcite, aragonite or dolomite minerals. This limited knowledge results from the scarcity of present-day microbialites in marine environments suggesting that the oceans that sustained massive microbial carbonate production must have had different chemical composition than present-day oceans. The scarcity of Recent marine microbialites is counter balanced by numerous occurrences of microbially mediated carbonates in non marine settings such as lakes, rivers and hydrothermal hot springs.

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Tipo seminario: Arduino Lecture

Proponente: Daiana Rita
