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Microbial community biofabrics in a geothemal environments from Iceland.

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We have identified and characterized the biological and mineralogical composition of mat-like biofabrics along a gradient from fresh to hot spring waters. Laser scanning confocal microscopy served to describe the structure of the mat forming living organisms. Scanning electron microscopy and energy-dispersive X-ray spectroscopy revealed the varying stages of mineralization of the living mats in contact with the different hydrochemistry of the fresh or hydrothermal waters.The complete encrustation by silica or iron of the mat forming organisms greatly enhance their preservation potential. These types of biofabrics are examples of the complex roles that microbes can play in mineralization, weathering and deposition processes in hot spring hydrothermal waters.