Analysis of microorganisms-mineral interaction in the deep subsurface of the Iberian Pyrite Belt

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Despite being considered an extreme environment due to their ologotrophic conditions, different studies have shown that life in the deep subsurface is abundant and diverse. Using Confocal Laser Scanning microscopy/Fluorescent in situ Hybridization (FISH) and confocal Raman microscopy we analyzed the association between microorganisms and the mineral substrates existing in the subsurface of the Iberian Pyrite Belt (IPB). A strong correlation detected between members of the Acidovorax genus and pyrite suggest that this nitrate reducing iron oxidizing bacteria is involved in the anaerobic oxidation of metal sulfides in the subsurface of the IPB.