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# Biogeochemical cycles operating in the deep subsurface of the Iberian Pyrite Belt

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Continental deep subsurface geomicrobiology is fundamental to our understanding of Earth´s biogeochemical cycles and their effect on regional and global processes. By using a range of compolmentary methodologies we identified the most representative microorganisms inhabitibg the solid rock deep subsurface of the Iberian Pyrite Belt. These microorganisms can carry out the complete and coupled C, H, N, S and Fe biogeochemical cycles in the absence of light generating diverse metabolic compounds to be used by microorganisms living in patchlily distributed biofilms wedged in mineral substrates. Our results highlight the contribution of subsurface geomicrobiology to a fuller appreciation of the importance of the dark biosphere on both the evolution of Earth and the detection of life on other planets.