

Discovery and microbial content of the driest site of the hyperarid Atacama Desert, Chile

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The Atacama Desert is the driest and oldest desert on Earth. Eleven years ago, the Yungay region was established as the driest site of this hyperarid desert and also close to the dry limit for life on Earth. Since then, much has been published about the extraordinary characteristics of this site and its pertinence as a Mars analogue model. However, as a result of a more systematic search in the Atacama here, we describe a new site, María Elena South (MES), which is much drier than Yungay. The mean atmospheric relative humidity (RH) at MES was 17.3%, with the RH of its soils remaining at a constant 14% at the depth of 1m, a value that matches the lowest RH measurements taken by the Mars Science Laboratory at Gale Crater. Remarkably, we found a number of viable bacterial species in the soil profile at MES using a combination of molecular dependent and independent methods, unveiling the presence of life in the driest place on the Atacama Desert reported to date. © 2014 Society for Applied Microbiology and John Wiley & Sons Ltd.