

P048 Influence of various O₂ concentrations on *Sulfolobus solfataricus* P2.

Gwénola Simon, Yannick Combet-Blanc, Richard Auria, John van der Oost and Laurence Casalot

IRD UMRD-180 LMBEC, ESIL case 925, 163 avenue de Luminy, 13288 Marseille cedex 9, France

S. solfataricus was grown on minimum medium with various O₂ concentrations in the gas phase ranging from 1.5 to 35% (v/v). Growth parameters were calculated for all cultures. Our results showed 4 series of oxygen concentrations leading to distinct behaviors. For concentrations at 35% O₂ and higher, the absence of growth seems to indicate the lethal effect of O₂ for the highest concentrations. From 26% to 32% O₂, the growth is altered, compared to the reference, showing the toxicity of O₂ at these concentrations. The concentrations, ranging from 16 to 24% O₂, exhibited the same parameters and were chosen as reference conditions. From 1.5 to 15% O₂, the growth is identical to the reference, as indicated by the growth rate and the yield on glucose. However, a better use of the energy from glucose at these concentrations, showed by the yield on O₂, seems to indicate that those conditions correspond to the optimal ones for *S. solfataricus* P2 growth. Four O₂ concentrations (1.5, 10, 21, 26) were chosen for transcriptomic analyses.