

Scientific Paper:

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O₂-sensitive Mikrokavitätenarrays: 3D-Zellkultursystem mit Sensorfunktion

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Abstract:

Oxygen is a crucial parameter for organotypic in vitro-cultures which are still performed under ambient atmosphere supplemented with 5 % CO₂. This can lead to hyperoxia with its associated effects on signaling cascades and their effects on cellular behavior. Here, we describe a platform that enables real-time, label-free, optical oxygen (gradient) measurements in organotypic 3D-/organoid cultures thus allowing for physioxic culture and assay conditions in e. g. mito stress tests and substance testing.

Keywords: Organotypische in vitro Kultur, Hypoxie, Physoxie, 3D Organoid Kultur, markerfreie O₂ Messung, Testung pharmazeutischer Inhaltsstoffe