

UNIVERSAL COATING COMPOUND

Tech ID: 25698 / UC Case 2016-117-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,995,225	05/04/2021	2016-117

BRIEF DESCRIPTION

Polydimethyl siloxane (PDMS) has many characteristics that make it the most popular candidate for producing organ-on-a-chip devices or micro-physiological systems (MPS) devices. After crosslinking, PDMS has shown to be biologically compatible and amenable to many standard cell culture techniques due to its transparency, oxygen permeability, and low auto-fluorescence. However, due to PDMS's hydrophobicity, molecules that are also hydrophobic partition into the PDMS to produce unpredictable concentrations in cell and media channels making it impossible to predict the actual dosing concentrations for drug investigations. This unpredictability is an obstacle for using organ-on-a-chip devices as screens for drug candidates in discovery stages.

Researchers at UC Berkeley have developed a simple coating procedure that allows the formation of substrate independent (universal) coatings. The researchers identified a novel compound able to form stable coatings that outperformed existing dip-coating precursor molecules in their ability to prevent absorbance of small molecules into a variety of organic and inorganic polymers, such as PDMS.

SUGGESTED USES

- » Novel Coating for microphysiological systems based on PDMS

ADVANTAGES

- » Biocompatible
- » Low cost
- » Oxygen permeability
- » Facile universal protocol

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ Growth Factor Sequestering and Presenting Hydrogels
- ▶ Isolation Of Cardiac Stem/Progenitor Cells Expressing Islet-1
- ▶ Formation Of Porous Scaffolds Of Growth Factor Sequestering Hydrogels By Cryogelation
- ▶ Bioinspired Hydrogels for the Treatment of Volumetric Muscle Loss Injury

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OTHER INFORMATION

KEYWORDS

coating, lab on chip, POC,

CATEGORIZED AS

- » **Materials & Chemicals**
- » Chemicals
- » **Nanotechnology**
- » Materials

RELATED CASES

2016-117-0

