

Press Release

Eppendorf introduces first ready-to-use, synthetic cell cultureware for iPSC and MSC stem cells

Hamburg, June 2018

Since the groundbreaking discovery of human induced pluripotent stem cells (hiPSCs) by Shinya Yamanaka in 2006, the use of pluripotent stem cells (PSCs) has experienced a boom. Due to their extensive in vitro self-renewal properties and their ability to differentiate into many different cell types, PSCs, and especially hiPSCs, offer exciting promises in a wide range of cell applications including regenerative medicine.

The major challenge of iPSC-cultivation is to preserve their properties until differentiation is induced. To support this, an appropriate culture medium and a defined extracellular matrix-mimicking growth surface/coating are crucial. Biological coatings commonly used to expand stem cells are inherently complex, non-defined growth surfaces that frequently reduce experimental reproducibility. This is exacerbated by lot-to-lot variations between coating media, by the use of undefined growth factors and extracellular matrix (ECM) components known to sustain cell adhesion and pluripotency, as well as by a potential pathogen contamination risk during preparation and storage. Therefore, in order to provide defined conditions, fully synthetic, animal component/human component-free culture systems are of great interest.

However, in contrast to other types of stem cells, synthetic and ready-to-use growth surfaces are currently not available for human induced PSCs (hiPSCs). Eppendorf has now introduced a ready-to-use surface with synthetic fibronectin-derived motifs to support cell attachment by mimicking native ECM proteins. According to the manufacturer, this novel surface supports long-term expansion of hiPSCs over 25 passages and is also suitable for hMSCs and other ECM-dependent cells. Furthermore, it allows expansion of stem cells in xeno-free and restrictive culture conditions, aiming to provide a completely defined culture system for PSCs without animal or human components.

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Information about Eppendorf CCCadvanced™ FN 1 motifs cell cultureware, including detailed expansion analyses of hiPSCs and hMSCs, is available at www.eppendorf.com/ccc-advanced

About Eppendorf AG:

Eppendorf is a leading life science company that develops and sells instruments, consumables, and services for liquid handling, sample handling, and cell handling in laboratories worldwide. Its product range includes pipettes and automated pipetting systems, dispensers, centrifuges, mixers, spectrometers, and DNA amplification equipment as well as ultra-low temperature freezers, fermentors, bioreactors, CO₂ incubators, shakers, and cell manipulation systems. Consumables such as pipette tips, test tubes, microliter plates, and single-use bioreactor vessels complement the range of highest-quality premium products.

Eppendorf products are most broadly used in academic and commercial research laboratories, e.g., in companies from the pharmaceutical and biotechnological as well as the chemical and food industries. They are also aimed at clinical and environmental analysis laboratories, forensics, and at industrial laboratories performing process analysis, production, and quality assurance.

Eppendorf was founded in Hamburg, Germany in 1945 and has more than 3,100 employees worldwide. The company has subsidiaries in 26 countries and is represented in all other markets by distributors.

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