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**Extracellular matrix patterning by atmospheric pressure plasma jets** AYUMI ANDO, Osaka University, TOSHIFUMI ASANO, Tohoku University, RYUGO TERO, Institute for Molecular Science, KATSUHISA KITANO, Osaka University, TSUNEO URISU, Institute for Molecular Science, SATOSHI HAMAGUCHI, Osaka University — The aim of this study is to develop a new patterning method of extracellular matrix (ECM) films by low-frequency atmospheric-pressure plasma jets (LF plasma jets). Micro patterning techniques of ECM to arrange living cells on a silicon substrate in a desired pattern are an important subject for the development of biosensor and biochip technologies. LF plasma jets may be used for such patterning because of their ability to produce highly reactive radicals while maintaining low-gas temperatures. Fluorescently-labeled ECM films deposited on a silicon substrate were irradiated by LF plasma jets with a metal stencil mask with several hundred micrometres size silts. The observation by a fluorescence microscope shows that ECM films were patterned following the stencil mask by the plasma irradiation for 15 seconds uniformly to the substrate. Adherence to and proliferation on the patterned ECM of living human cells were also confirmed.

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