

Photo-responsive polymer with erasable and reconfigurable micro- and nano-patterns: An in vitro study for neuron guidance

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R�sum� en anglais	<p>The interaction of cells with nanoscale topography has proven to be an important modality in controlling cell responses. Topographic parameters on material surfaces play a role in cell growth. We have synthesized a new bio compatible polymer containing photoswitching molecules. Stripepatterned (groove/ridge pattern) were patterned and erased with ease on this bio azopolymer with two different set-ups: one with the projection of an optical interference pattern and the other one by molecular self-organization with one single laser beam. These two set-ups allow the re-writing of pattern after erasing and its inscription in vitro. PC12 cells were cultured on the bio-photoswitching patterned polymer and compared with PC12 cells growing on a well know substrate: poly-L-lysine. This result is of interest for facilitating contact guidance and designing reconfigurable scaffold for neural network formation in vitro. (C) 2011 Elsevier B.V. All rights reserved</p>
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