

Zein Self-Assembly on Nano- and Micro- Patterned Hybrid Surfaces

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Abstract

Zein differential adsorption on nanopatterned hybrid –COOH and –CH₃ surfaces was investigated. Dip-pen nanolithography (DPN) was used to write line arrays (3000nm long, 150 nm wide) of 16-mercaptohexadecanoic acid (MHA) on gold surfaces. Grid patterns were also produced by DPN. Background ink was 18-octadecanethiol (ODT). Inked substrates were immersed in zein solutions for adsorption and structure assembly. Topographical images by atomic force microscopy (AFM) showed high raise zein structures on MHA patterns contrasting with low laying deposits on background ink. Zein structures thus formed may find use in construction of cell growth scaffolding.