

Microstructured glass chip for ion-channel electrophysiology

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We present a technique by which it is possible to produce a planar sensor for ion channel electrophysiology from glass substrates. Apertures with diameters in the low micrometer to submicrometer range are achieved by irradiation of a glass chip with a single heavy ion and subsequent wet track etching. The function of the device is demonstrated by recordings of single channel currents mediated by the model ion channel gramicidin A in lipid bilayers spanning the micromachined aperture.