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Polymer Translocation Through a Nanopore from a Crosslinked Gel to Free Solution DAVID SEAN, HENDRICK W. DE HAAN, GARY W. SLATER, University of Ottawa — We present results from a computer simulation study of DNA translocation through a nanopore in a membrane that separates a gel region from free solution. The gel is modeled by a square lattice of fixed poles such that the pore size is set by the lattice spacing. Starting with the DNA on the gel side, we examine how the gel pore size affects the dynamics of translocation. We find that due to entropic and frictional forces, the mean translocation time is affected by gel pore size. Since the spatial restrictions imposed by the gel limit the dynamics to one-dimensional motion on the cis side, variations in the width of the distribution of translocations times are also observed.

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