



سمینار هفتگی ماده چگال نرم

Mammalian sperm navigation within the female reproductive tract

Abstract

Efficient migration to search for targets within complex environments is crucial for biological systems. To appropriately migrate in complex settings, searchers must obtain exogenous clues from the environment and regulate their motion according to the information provided. At the microscopic scale, examples include bacterial chemotaxis in fluctuating environments, T-cell locomotion in tissues, and mammalian sperm migration within the female reproductive tract (FRT). Sperm migration within the FRT, however, is unique; it is subject to an intense selection process by the FRT that selects for only one sperm. Furthermore, unlike bacteria and somatic cells, sperm nuclei are mostly inactive, which makes them even more information starved and their performance heavily reliant upon the FRT.

In this presentation, I will discuss some biochemical and biophysical clues provided by the FRT and their corresponding effect to steer sperm to find and ultimately induce it to fertilize the oocyte.

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