SUPPORTING INFORMATION

Transverse Chemotactic Migration of Bacteria from High to Low Permeability Regions in a Dual Permeability Microfluidic Device

Rajveer Singh[1] and Mira Stone Olson[2*]

[1]Department of Civil and Environmental Engineering,

University of Illinois Urbana-Champaign, IL-61801

[2]Department of Civil, Architectural and Environmental Engineering,

Drexel University Philadelphia, PA- 19104

Number of pages = 3

Number of Figures = 2

* Address:

3141 Chestnut Street

Philadelphia 19104 PA. USA

Phone: 215-895-2987

Fax: 215-895-1363

e-mail: mira.s.olson@drexel.edu

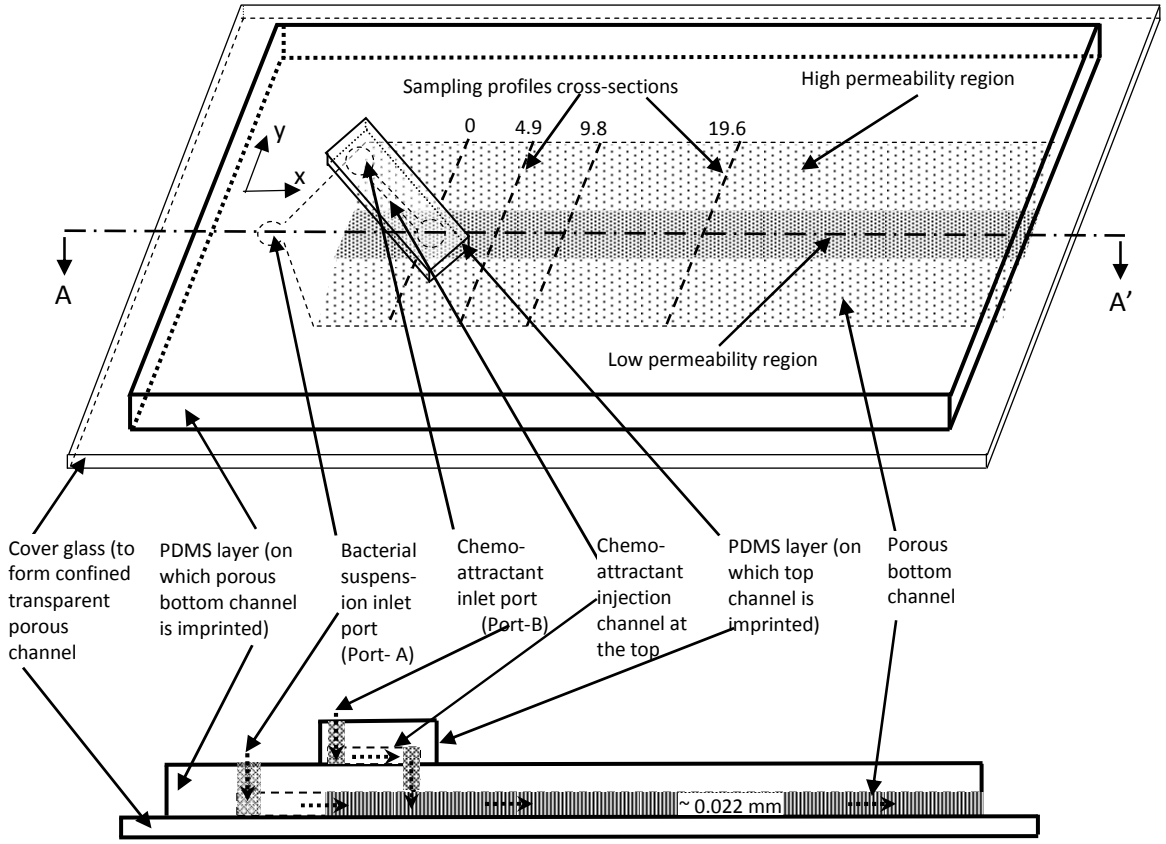

Figure S1: Schematic representing the bi-layer micro-fluidic device (MFD) used for testing transverse chemotactic migration of bacteria in dual-permeability porous media. An isometric-view (top) showing the porous channel (between the glass and first PDMS layers) simulating a very thin layer of a two dimensional aquifer slice connected to an overlying channel (between two PDMS layers) simulating leakage from an underground storage tank. A vertical cross-sectional view through section AA' (bottom) shows the closed channel opening though which different injectates flow through the device. Cross-sections representing sampling locations at 4.9, 9.8, and 19.6 mm downstream from the attractant inlet point into the porous channel are also shown (top). The other specific pore geometry details are given in Figure 1 and Table 1. The figure is reproduced from Singh and Olson [29] and is appropriately modified to describe the arrangement of the two different pore geometries in this study.

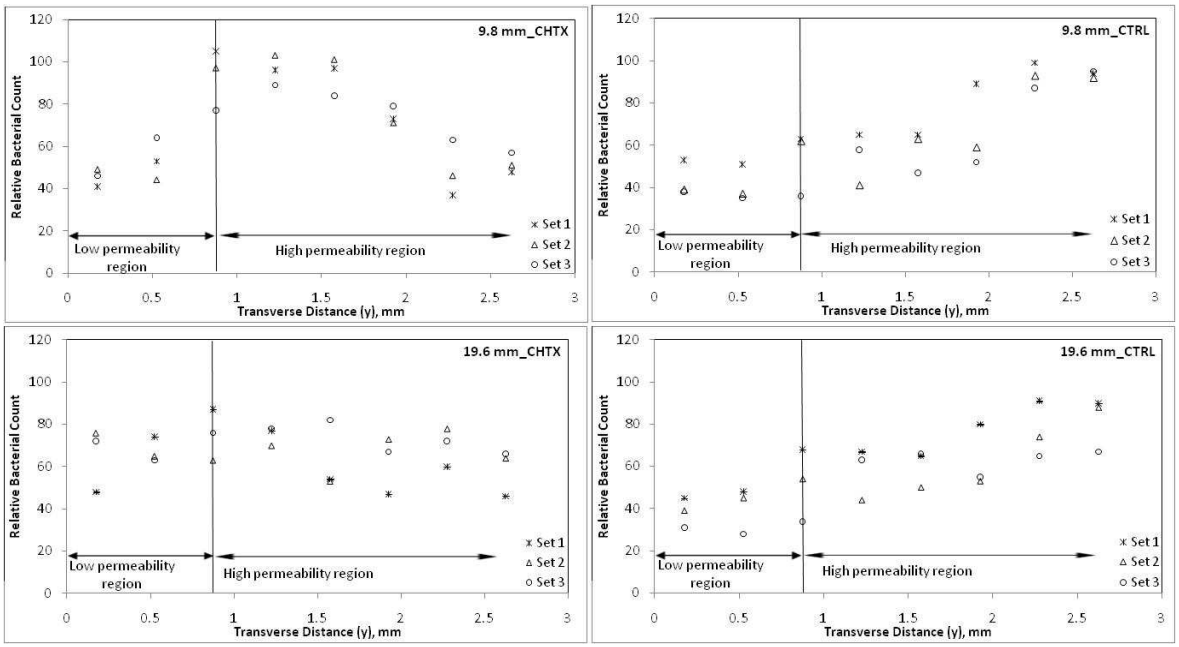

Figure S2: Total bacterial count data corresponding to Figure 3. Left and right side plots corespond to chemotactic and non-chemotactic conditions, respectively, at cross-sections 9.8 mm (top) and 19.6 mm (bottom) from the attractant injection point into the porous bottom channel.