Focusing and de-focusing transition depending on the ratio  $Q_{out}/Q_{in}$ where  $Q_{out} = 0.1$  ml/min and  $0.250 < Q_{in} < 3 \mu$ l/min





2D axisymmetric COMSOL Multiphysics<sup>®</sup> simulations of the velocity streamline in the millichannel, where  $Q_{out} = 400 \mu l/min$  and a)  $Q_{in} = 10 \mu l/min$ ; b)  $Q_{in} = 100 \mu l/min$