Vortex-integrated Bio-Editors to Catalyze Personalized Treatment

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@fromHurLab

μFluidic Biophysics

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Personalized Cancer Theranostics

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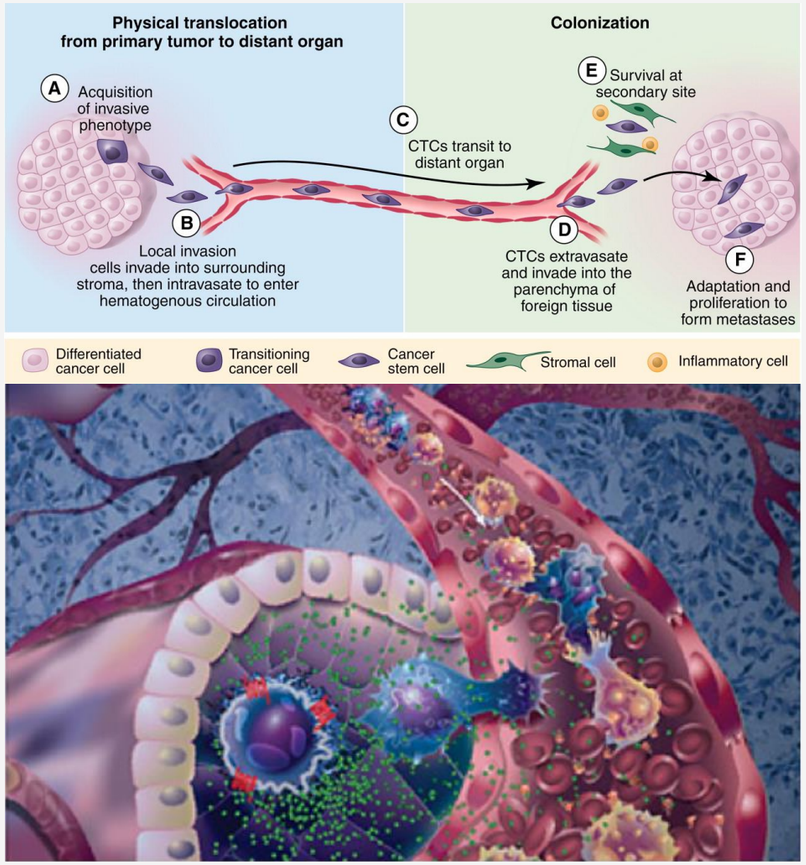
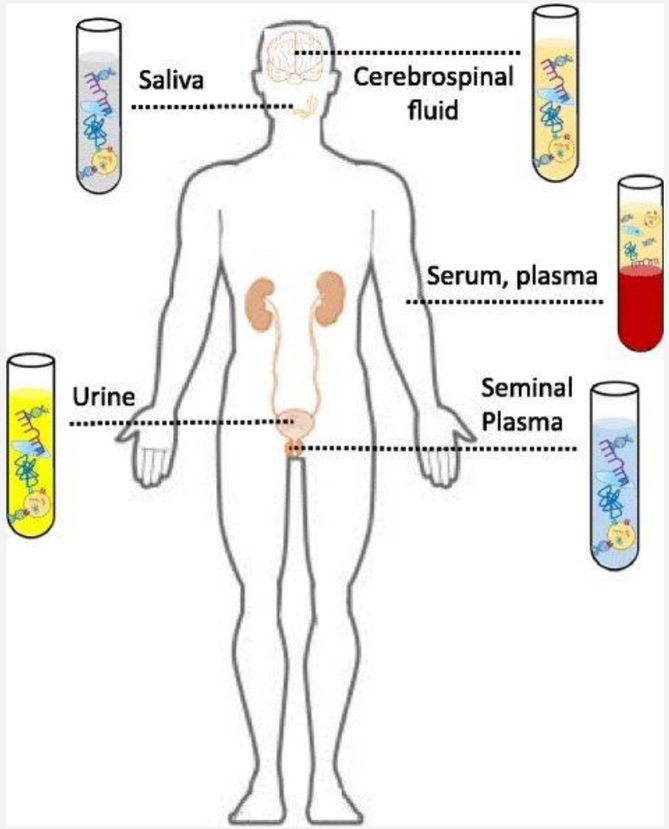
Circulating Tumor Cells



http://kuhn.scripps.edu/default.aspx

Liquid Biopsy

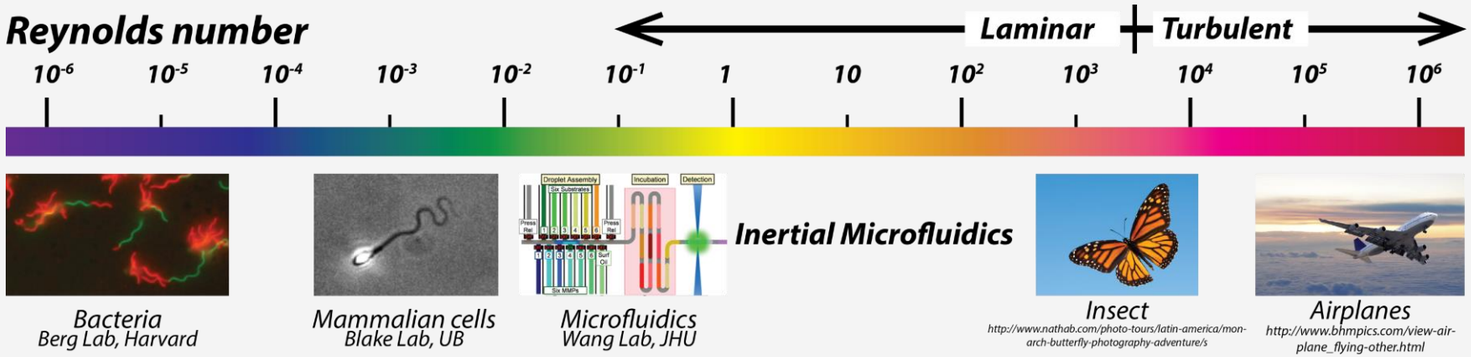


https://goo.gl/TLzB6J

Cytotoxic T-cells

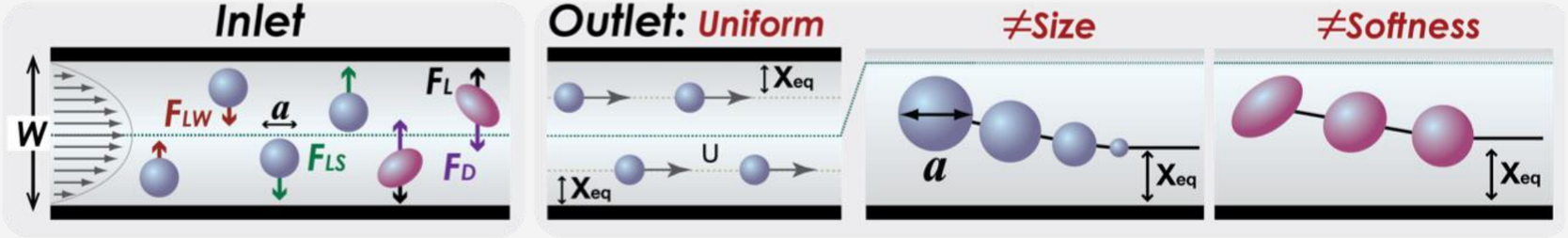
https://goo.gl/8KMynq

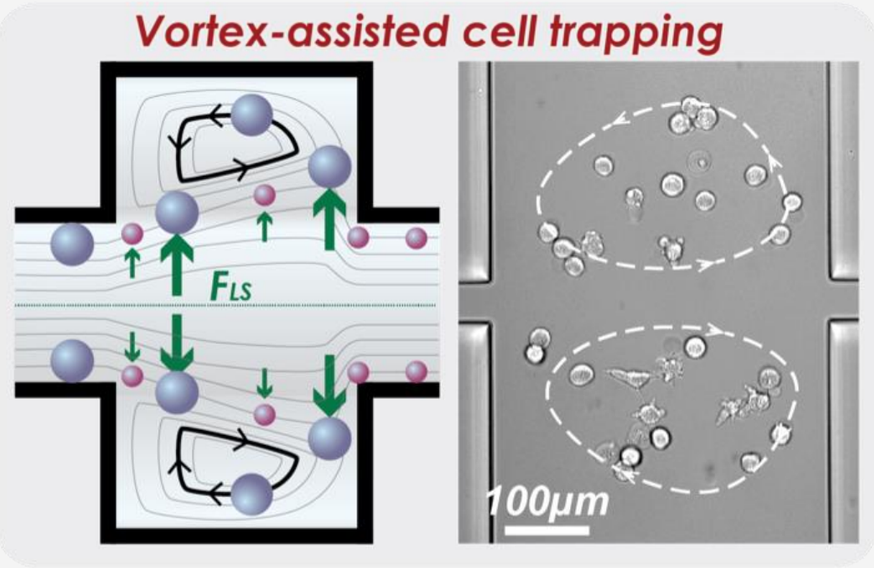
Inertial Microfluidics

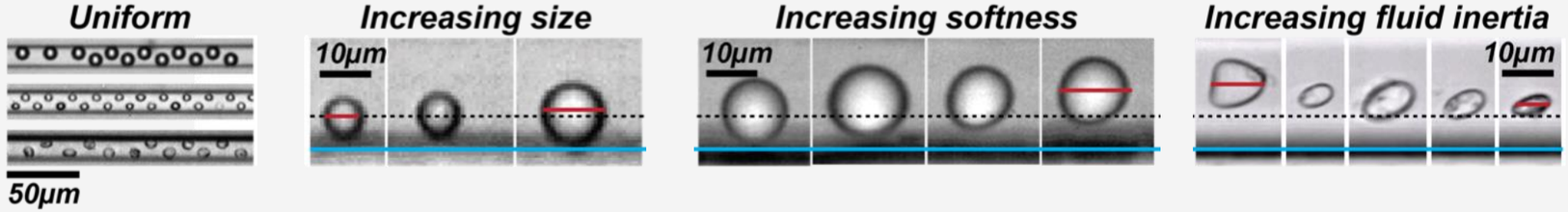


Inertial…

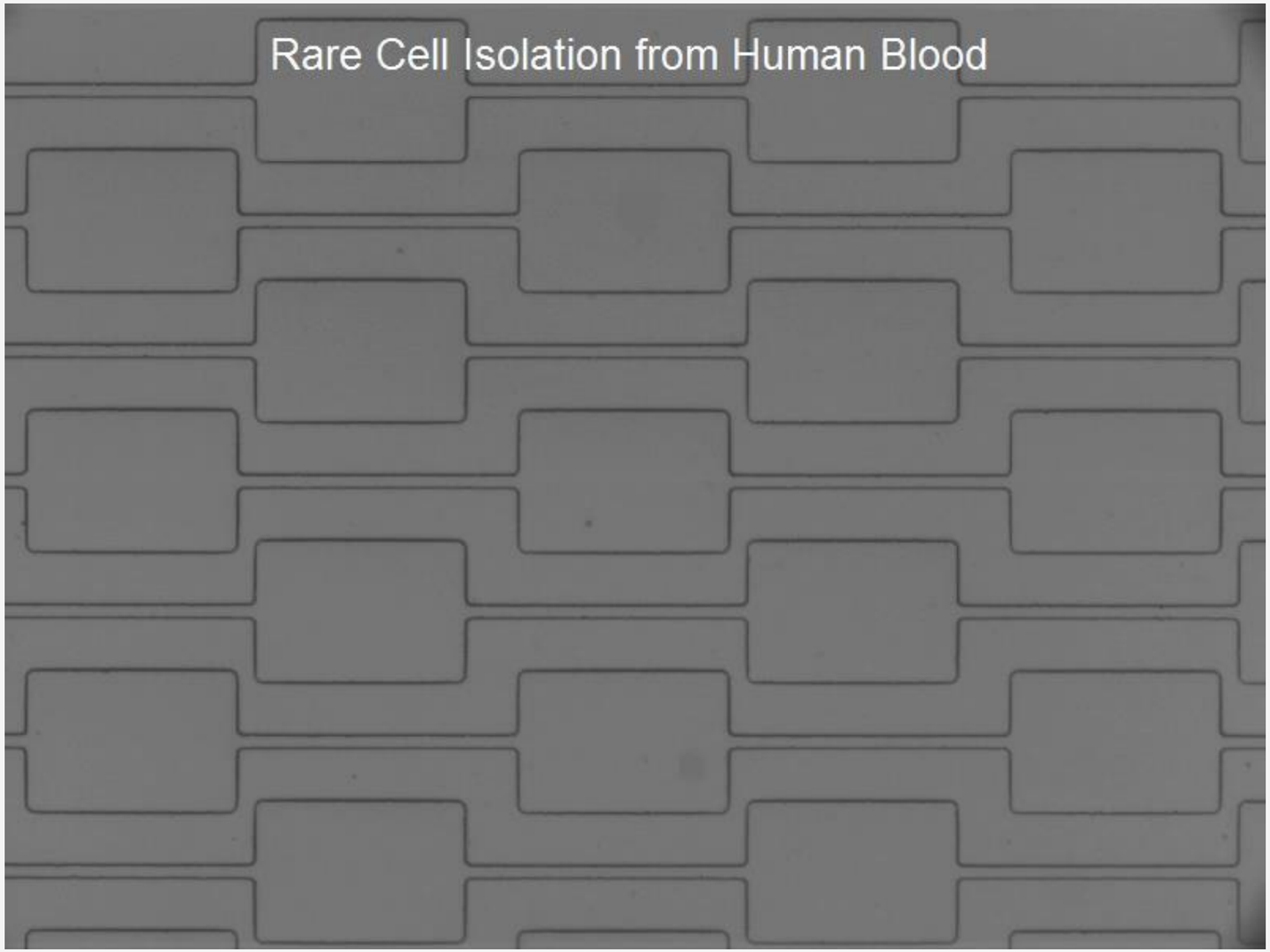
$$R_c = \frac{Inertial}{Viscous} = \frac{\rho U_m W}{\mu}$$







Massively Parallel CTC Filtration



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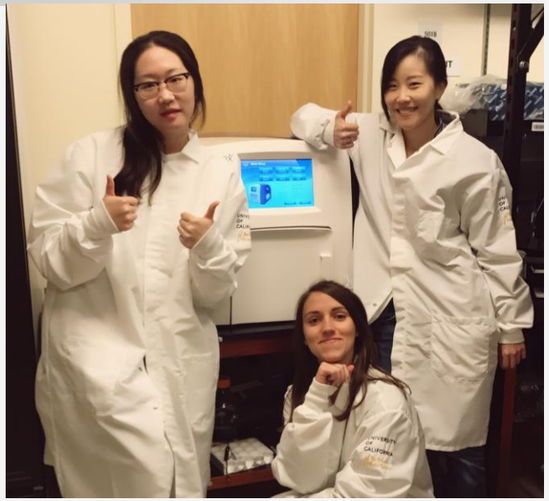
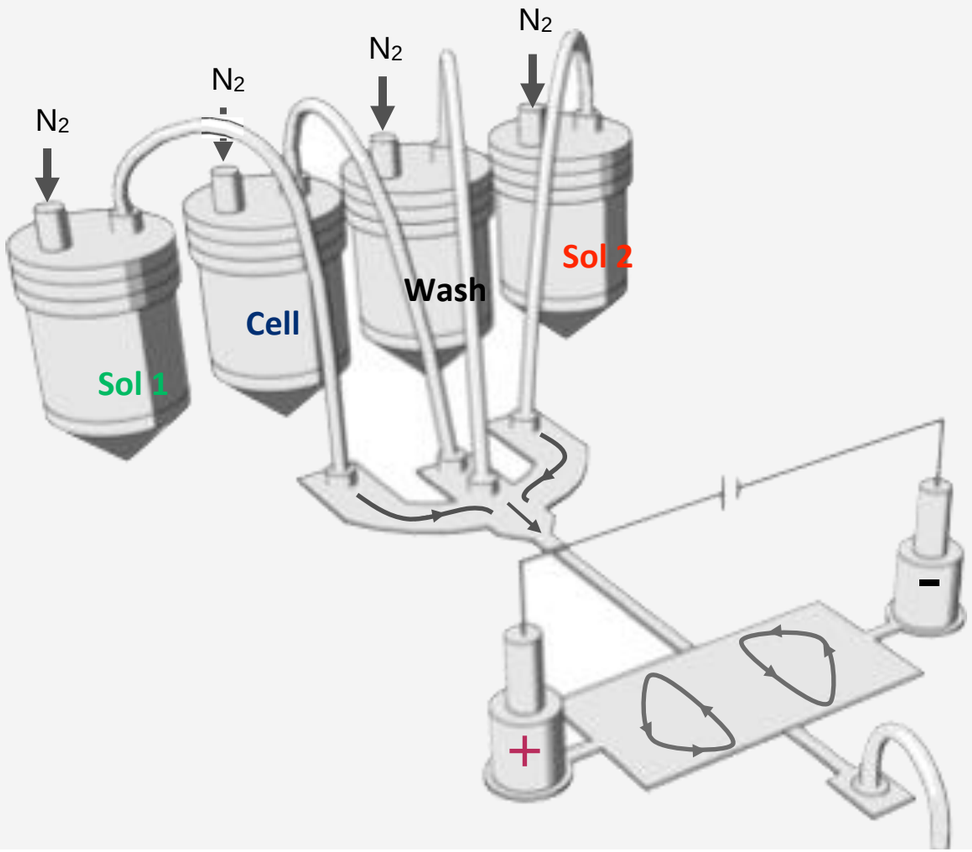
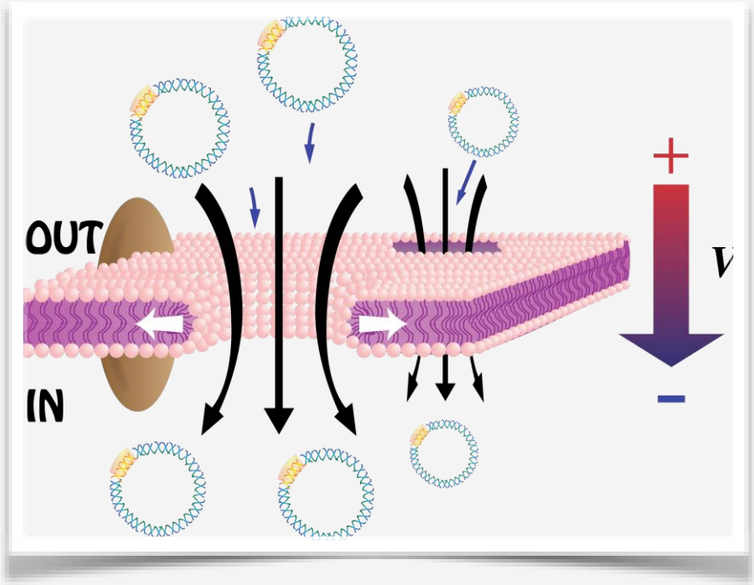


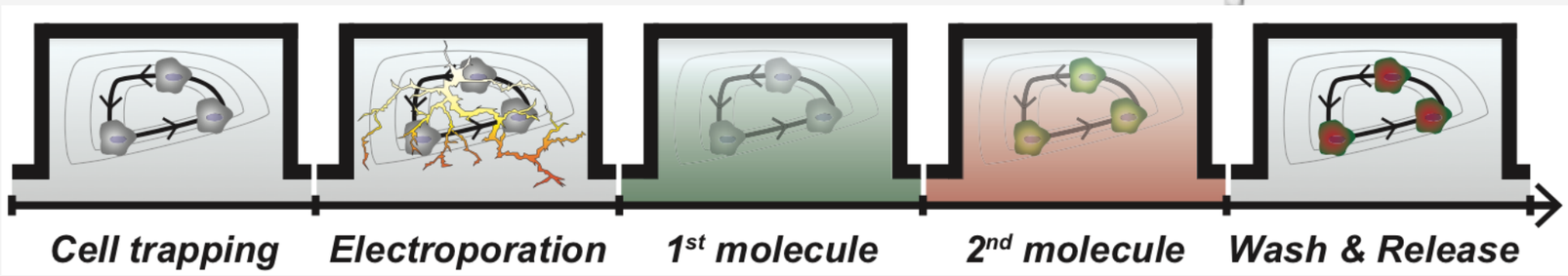
Hur and Di Carlo Biomicrofluidics 2011
Mach, Kim, Arshi, Hur and Di Carlo, Lab Chip 2011

Electroporation for Intracellular Multi-Molecular Delivery

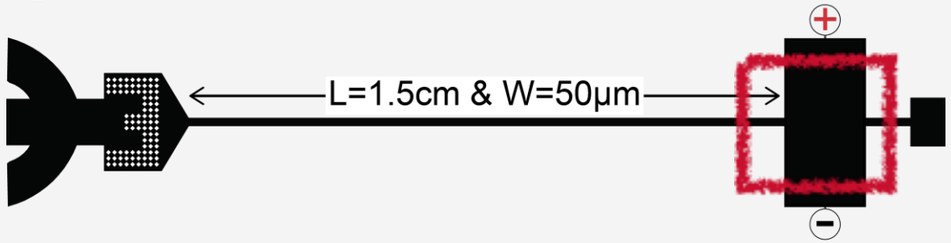
H. Yun and S.C. Hur, Lab on a Chip (2013)

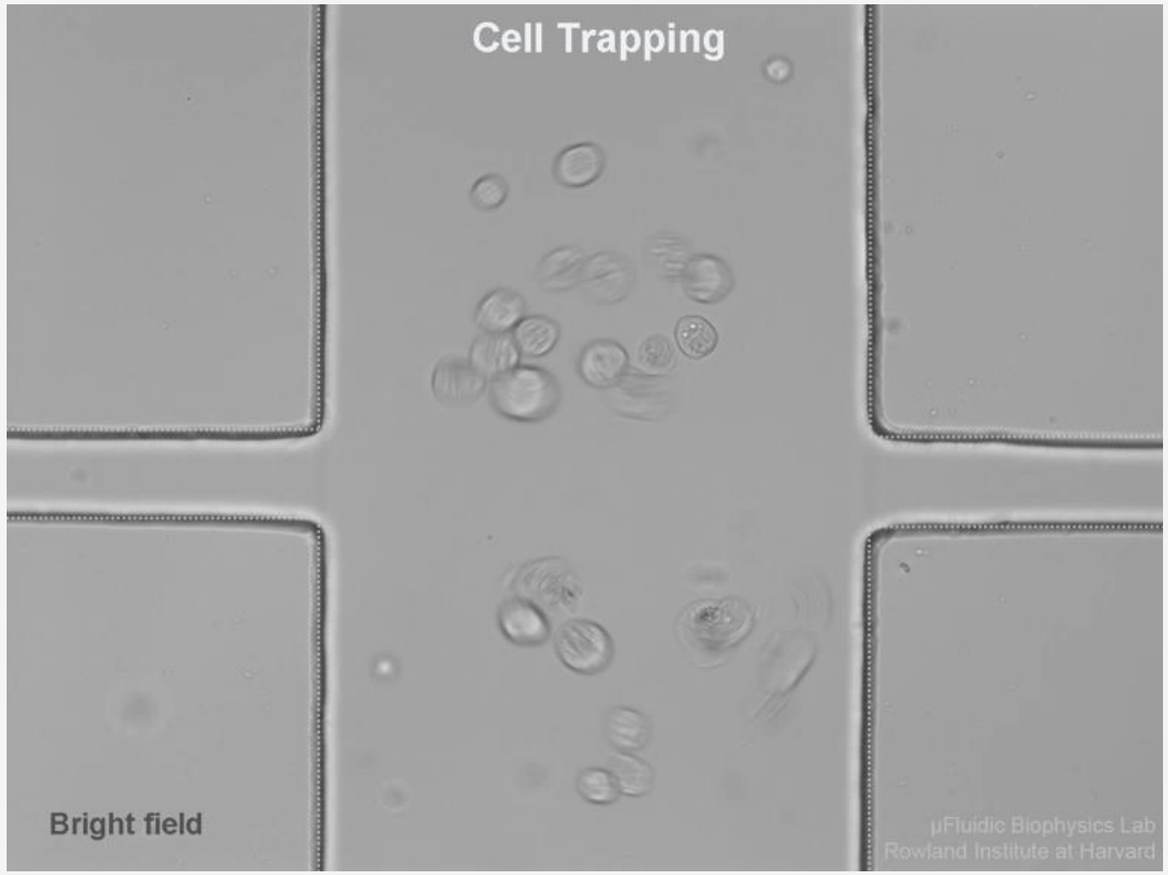


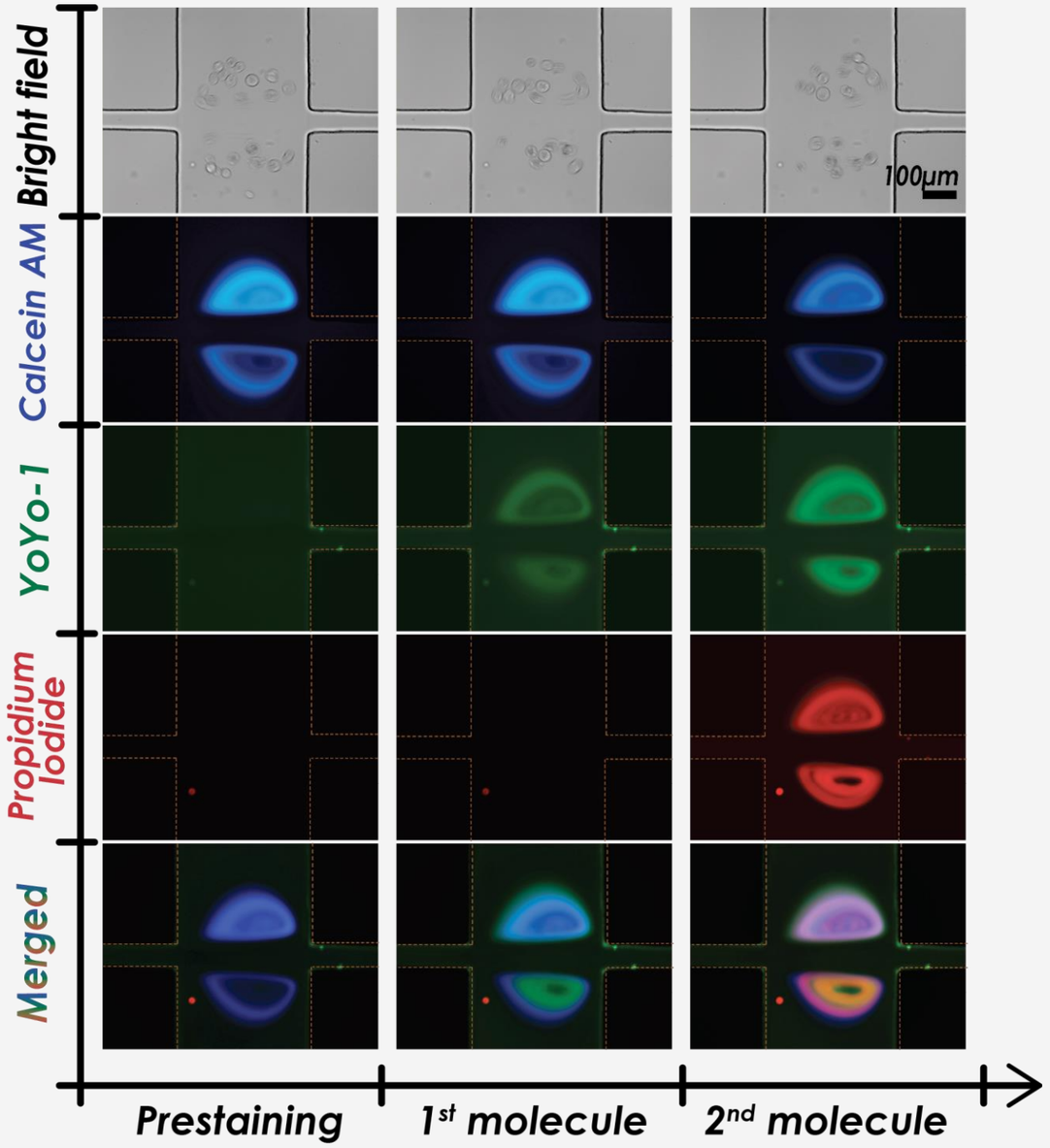




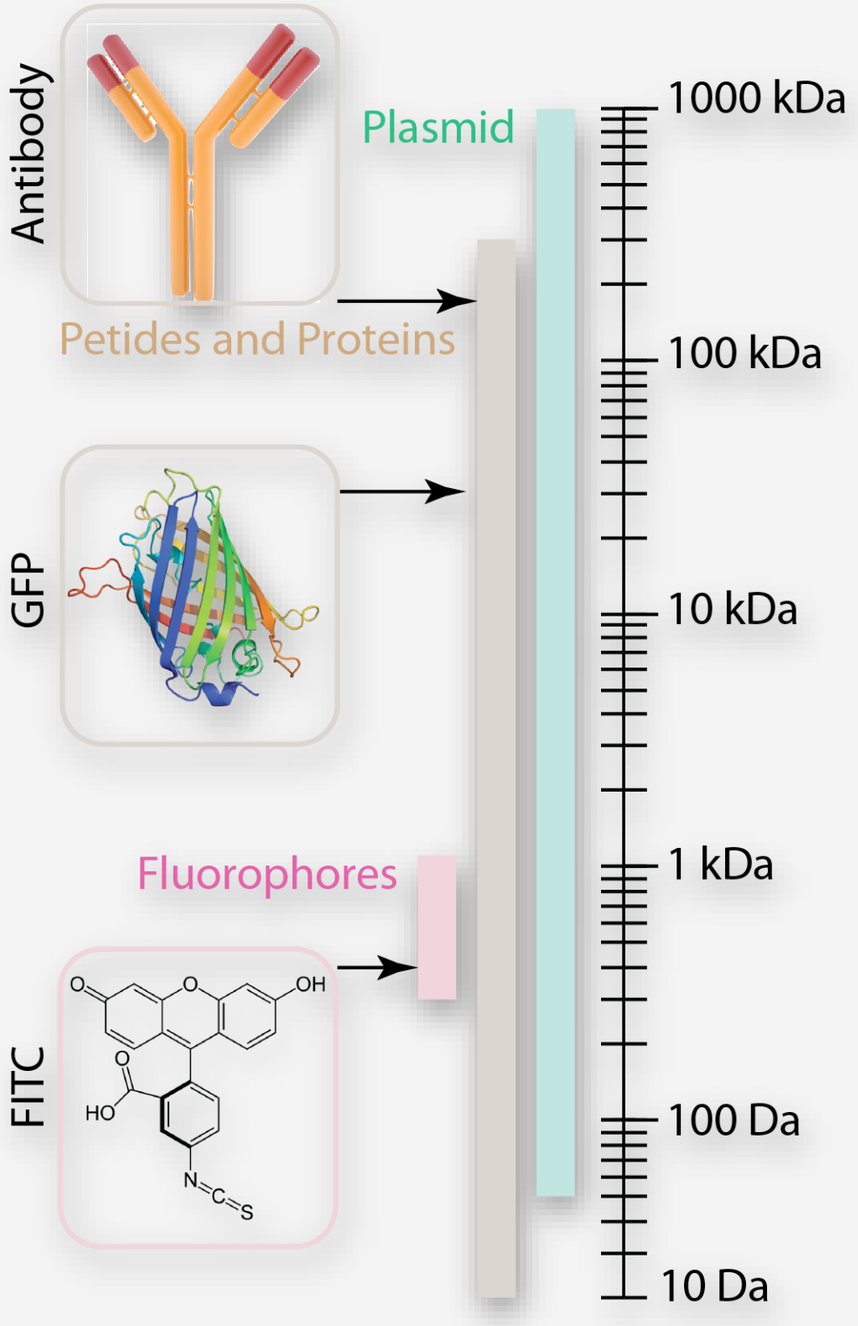
Sequential Multi-Molecular Delivery



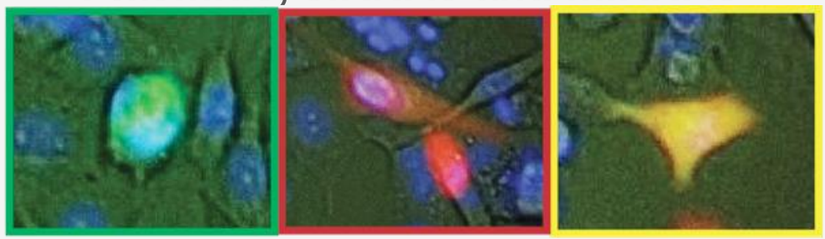




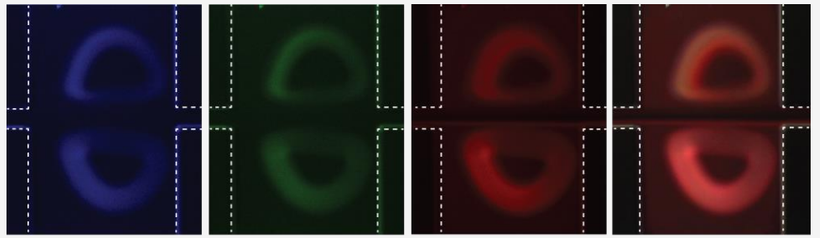
H. Yun and S.C. Hur, Lab on a Chip (2013)



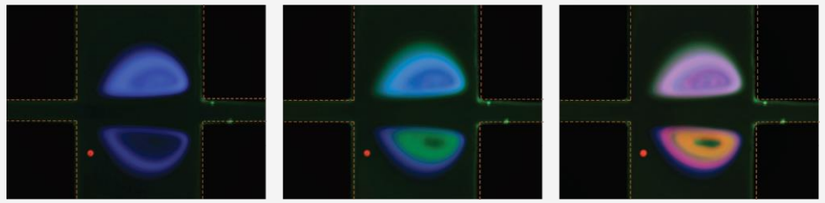
Plasmids, siRNAs and miRNAs



Intact Proteins



DNA fluorescent dyes



Yun and Hur, Lab on a Chip 2013
Vickers and Hur, JoVE 2014
Vickers, Ouyang, Choi and Hur, Anal. Chem 2014
Ouyang *et al.*, Nat Sci. Rep 2017

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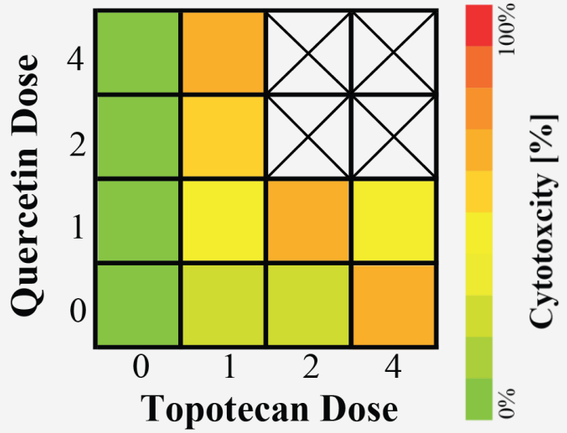
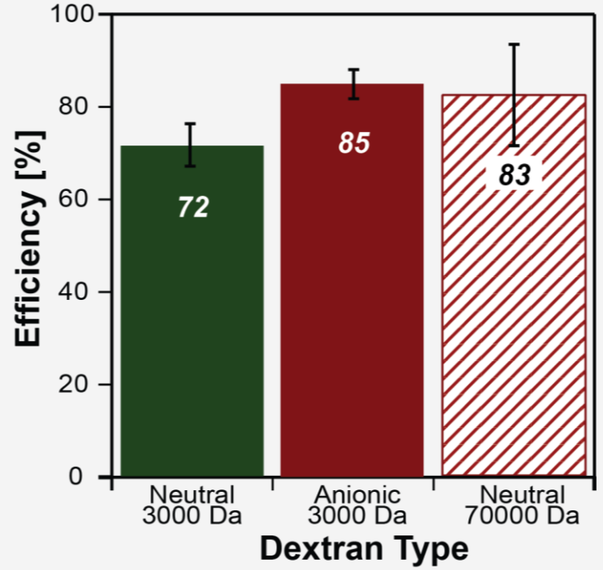
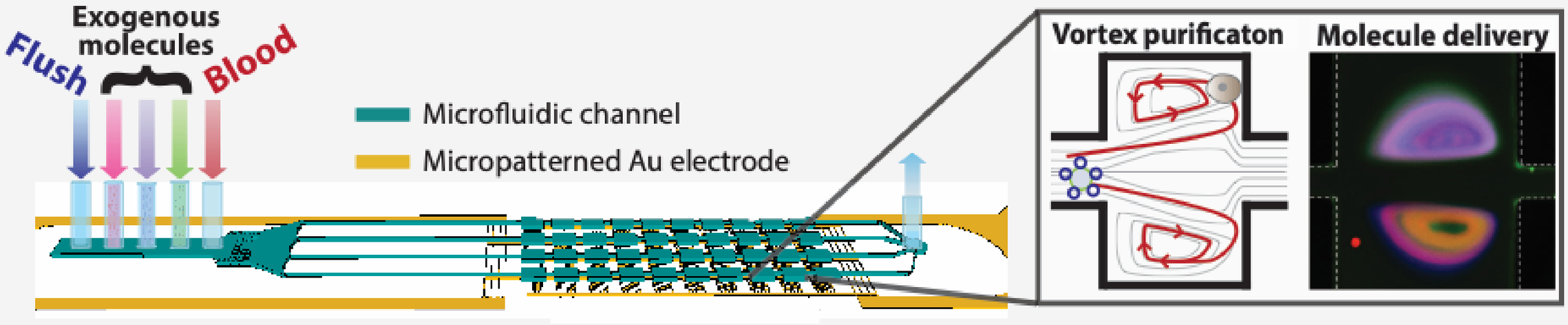
Drug Cocktail Evaluation

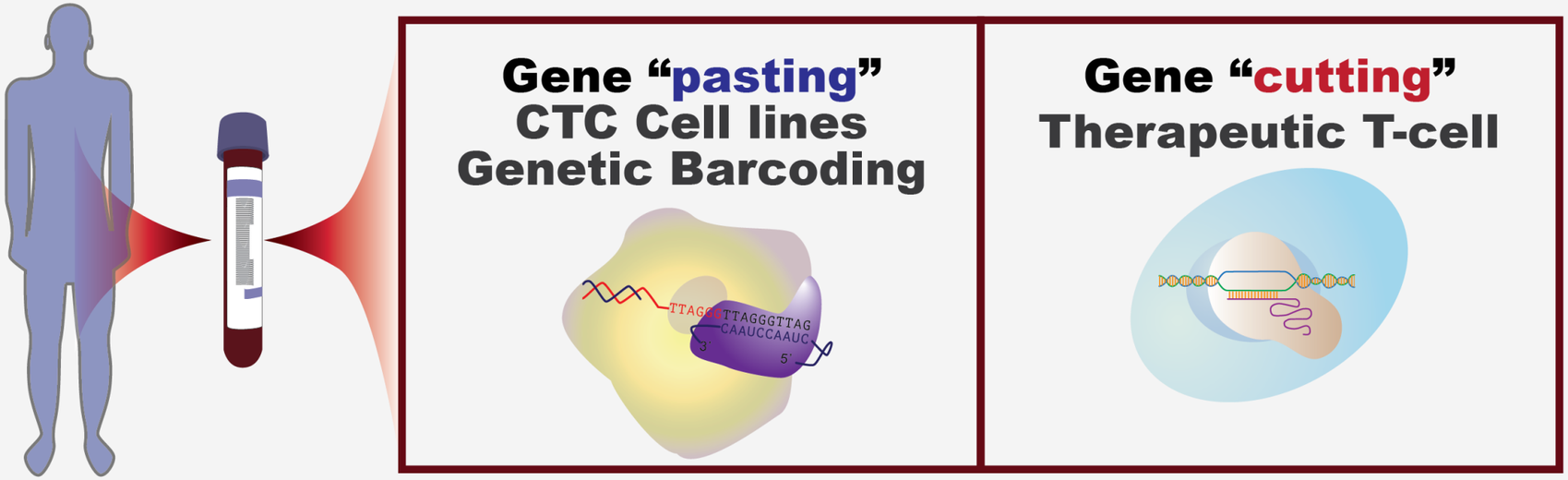


Macromolecules



Vortex-integrated BioEditor





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