



## Motivation

## Introduction

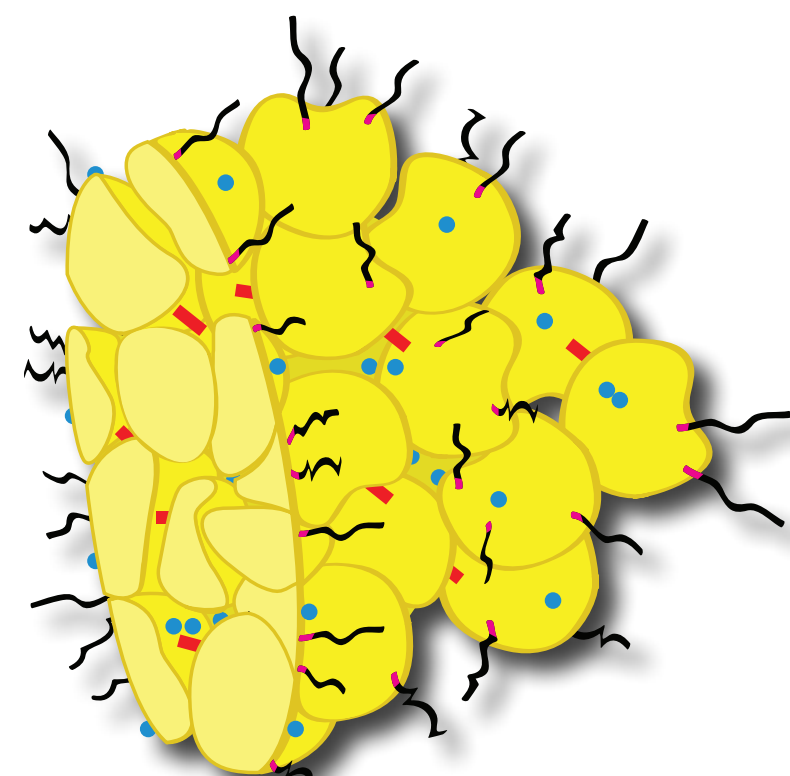
**Gliding Motility Assay**

Kinesin Microtubule

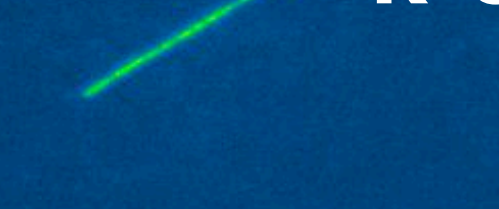
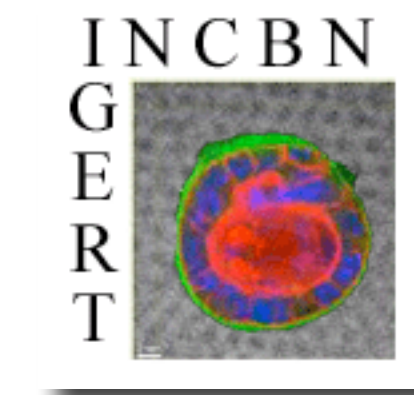
Casein Glass slide

## Casein<sup>2</sup>

- Phosphate groups
- Calcium Phosphate
- k-casein with carbohydrates
- Casein protein complex




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**K-casein**

KochLab data

15  $\mu$ m



PC functionalized

KochLab data

15  $\mu\text{m}$

1. Verma, Vivek, William Hancock, and Jeffrey Catchmark. "The role of casein in supporting the operation of surface bound kinesin." *Journal of Biological Engineering* 2, no. 1 (2008): 14. doi:10.1007/s10815-007-9180-2.
2. <http://www.food-info.net/uk/protein/milk.htm>
3. Kam, Lance, and Steven G. Boxer. "Spatially Selective Manipulation of Supported Lipid Bilayers by Laminar Flow: Steps Toward Biomembrane Microfluidics." *Langmuir* 19, no. 5 (March 1, 2003): 1624-1631. doi:10.1021/la0263413.
4. Mennicke, Ulrike, and Tim Salditt. "Preparation of Solid-Supported Lipid Bilayers by Spin-Coating." *Langmuir* 18, no. 21 (October 1, 2002): 8172-8177. doi:10.1021/la025863f.
5. HHMI Report 2005.
6. CINT is a user facility. More information can be found here, <http://cint.lanl.gov/>
7. Guydosh, Nicholas R, and Steven M Block. "Direct observation of the binding state of the kinesin head to the microtubule." *Nature* 461, no. 7260 (September 3, 2009): 125-128. doi:10.1038/nature08259. Supplemental information.

\* Images false colored in ImageJ.