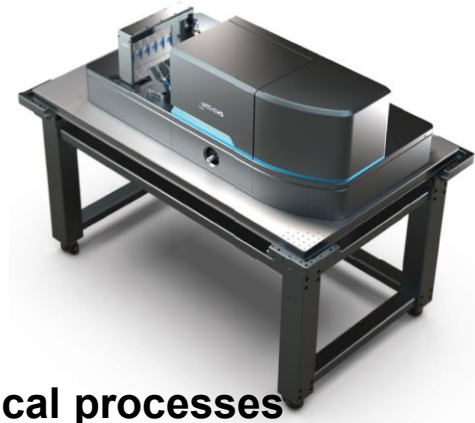


# C-Trap<sup>®</sup>

Optical Tweezers - Fluorescence Microscopy  
Best-in-class dynamic single-molecule microscopy



LUMICKS C-Trap<sup>®</sup> is an easy-to-use microscope combining high-end optical tweezers, fluorescence and label-free imaging, and advanced microfluidics in a correlated way. It enables the real-time observation and manipulation of biological processes at different scales, from individual molecules to whole cells.



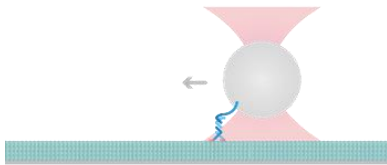
## Single-molecule investigations of dynamic biological processes



Track individual DNA-binding proteins and assess their dynamic properties under biological conditions.



Measure conformational changes of single proteins, DNA or RNA molecules in real time.

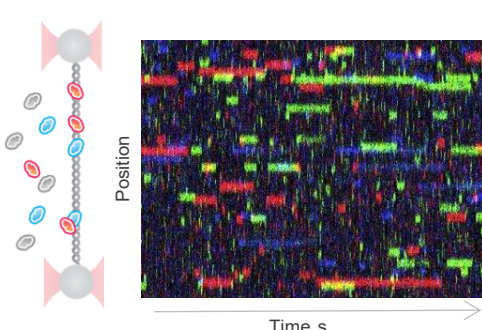


Assess highly dynamic processes of cytoskeletal remodeling and motor-protein transportation.

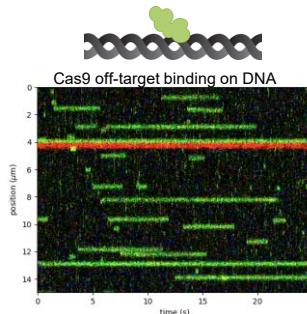


Uncover mechanical principles of cellular function and biomolecular condensates across scales.

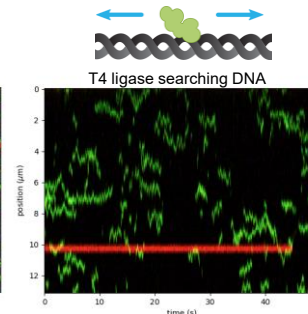
## Kymograph: real-time tracking of single-molecule motions



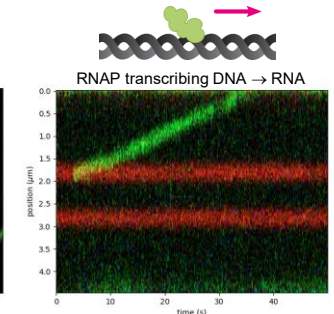
Different proteins binding to DNA



Static binding of single protein on DNA



Diffusion of single protein on DNA



Directed motion of single protein on DNA



Over 70% of studies with C-Trap data are in high-impact journals

### Selected publications with C-Trap data:

*F. X.A. et al.* GAGA zinc finger transcription factor searches chromatin by 1D–3D facilitated diffusion. **Nat Struct Mol Biol** (2025).  
*M. H. J. et al.*, Determination of single-molecule loading rate during mechano transduction in cell adhesion. **Science** (2024).  
*B. B. et al.* Kinesin-1-transported liposomes prefer to go straight in 3D microtubule intersections by a mechanism shared by other molecular motors, **PNAS**. (2024).  
*A. P. et al.* FANCD2–FANCI surveys DNA and recognizes double- to single-stranded junctions. **Nature** (2024).  
*H. D. B. et al.* Cell protrusions and contractions generate longrange membrane tension propagation. **Cell** (2023).

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