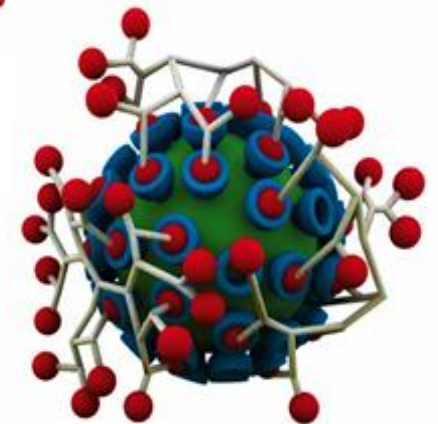
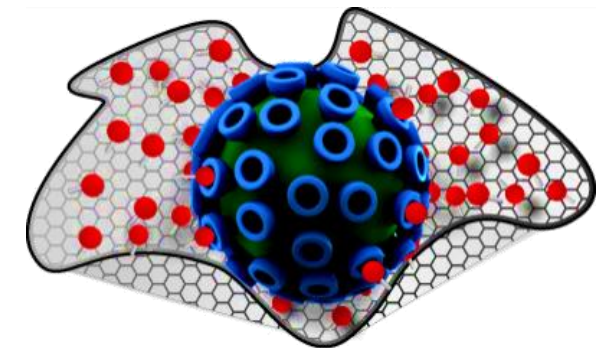


Nanoscale 2014
J. Am. Chem. Soc. 2015
Nano Lett. 2020

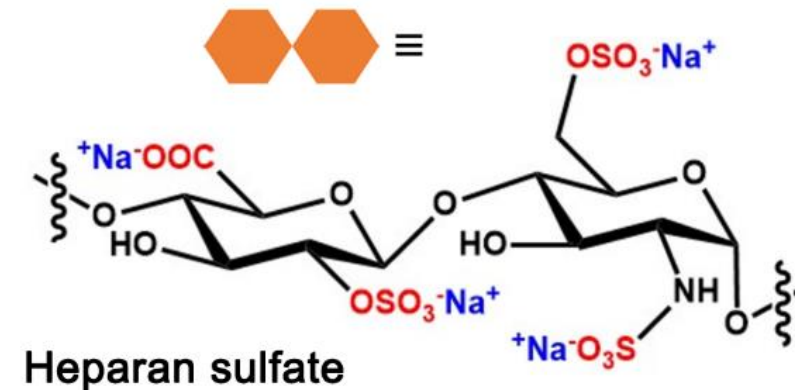
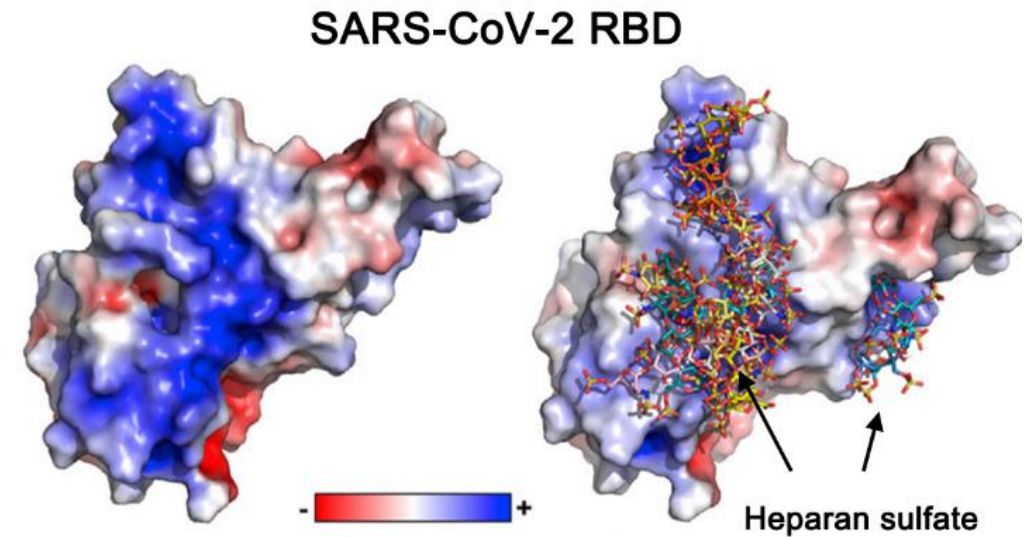
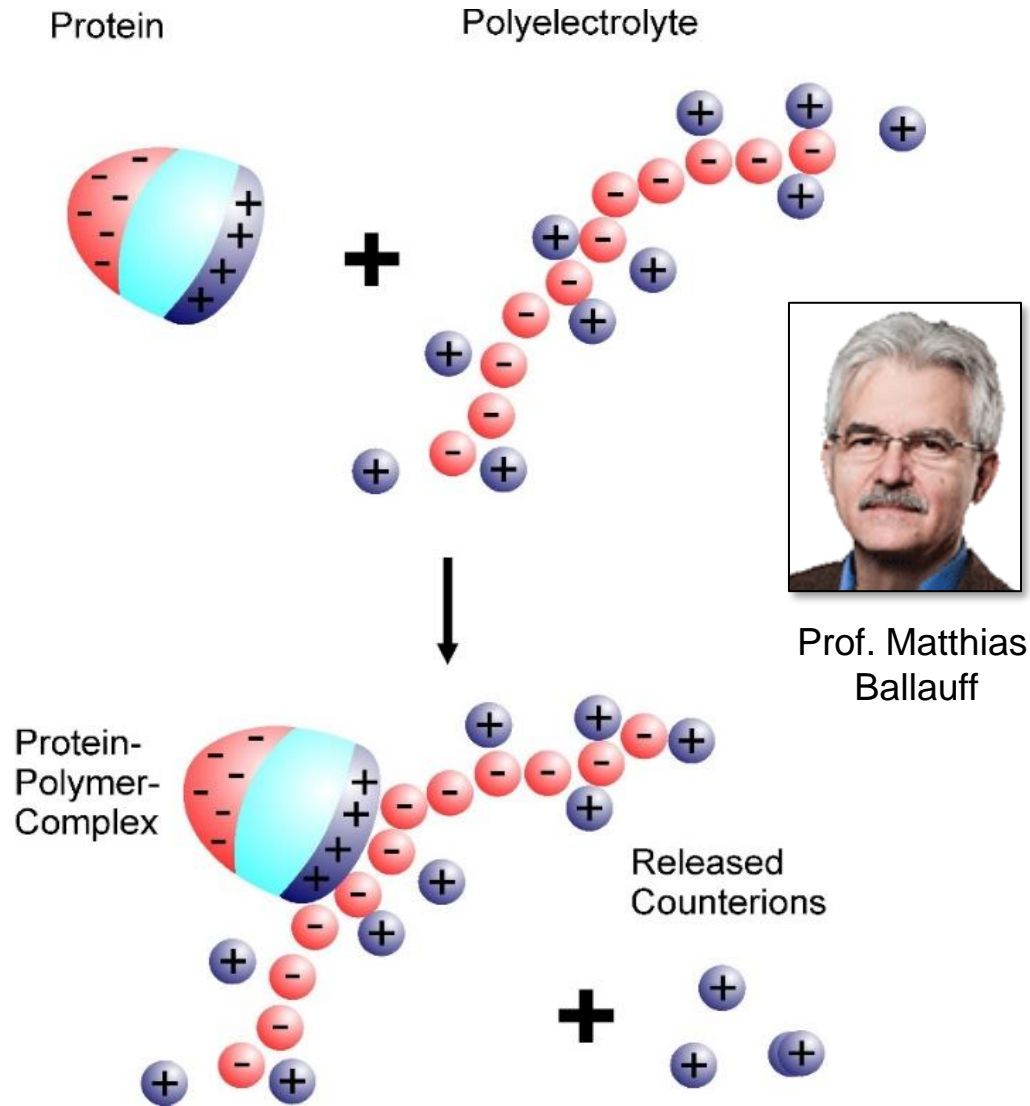


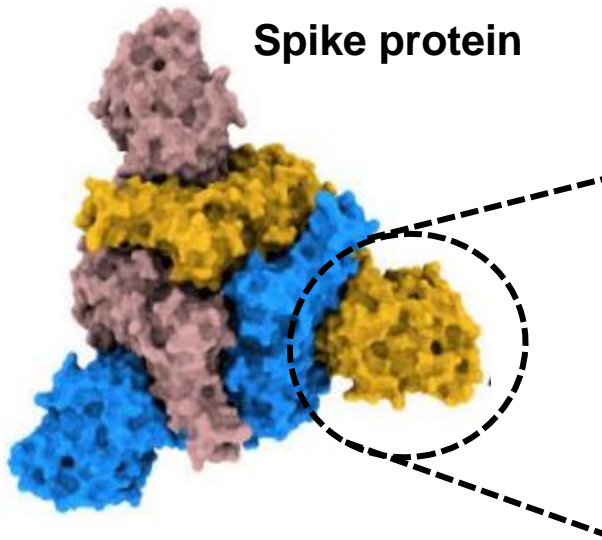
Adv. Health. Mater. 2016
Angew. Chem. 2017
Biomaterials 2017



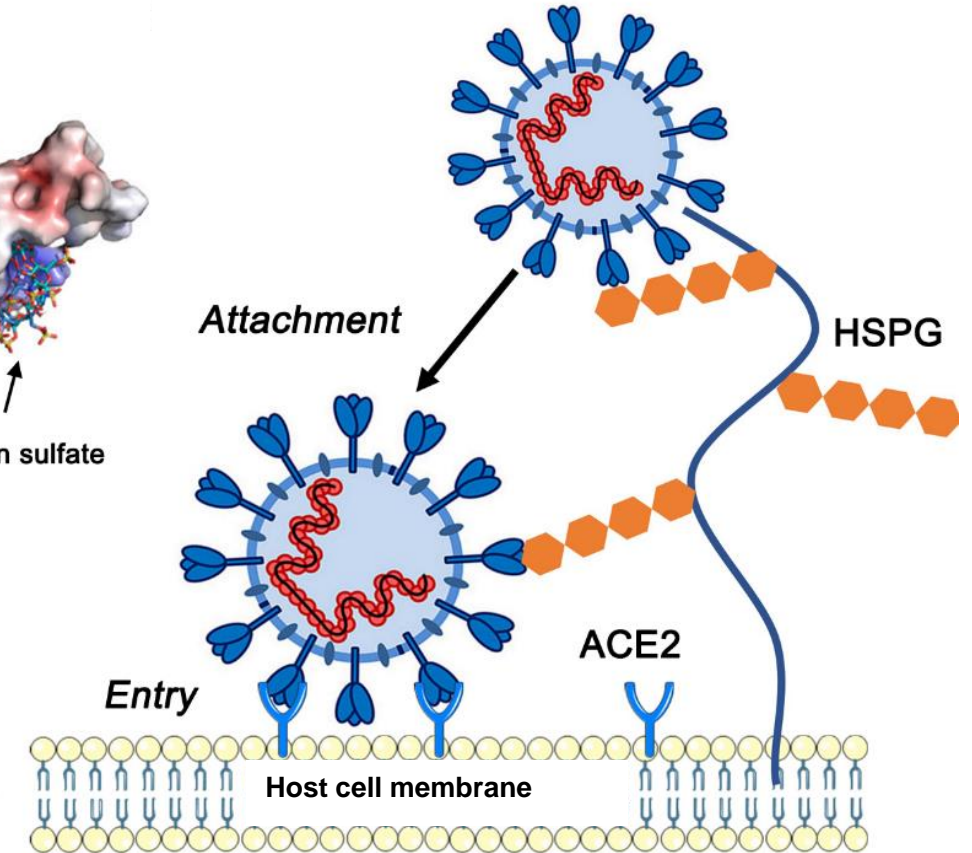
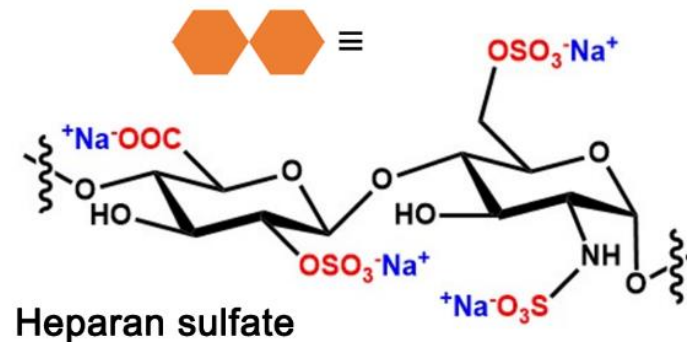
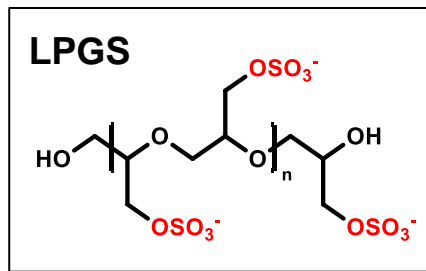
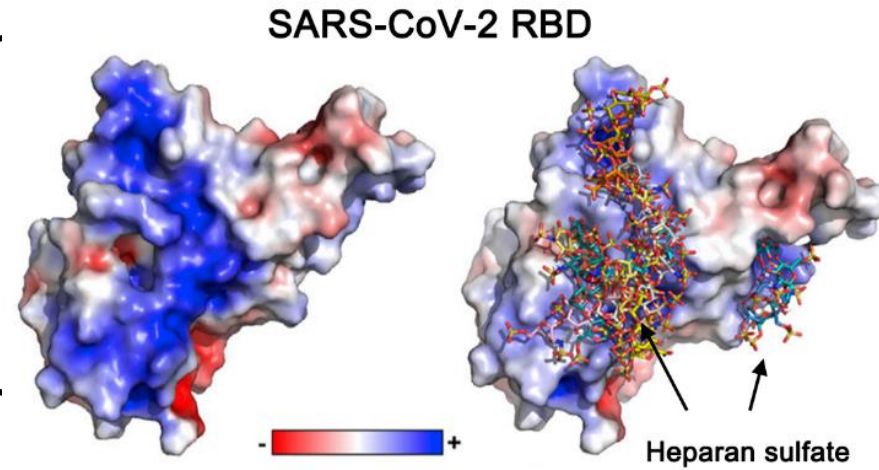
Adv. Funct. Mater. 2018
Angew. Chem. 2020
Sci. Adv. 2021

Multivalent Polyelectrolytes and Counterion Release

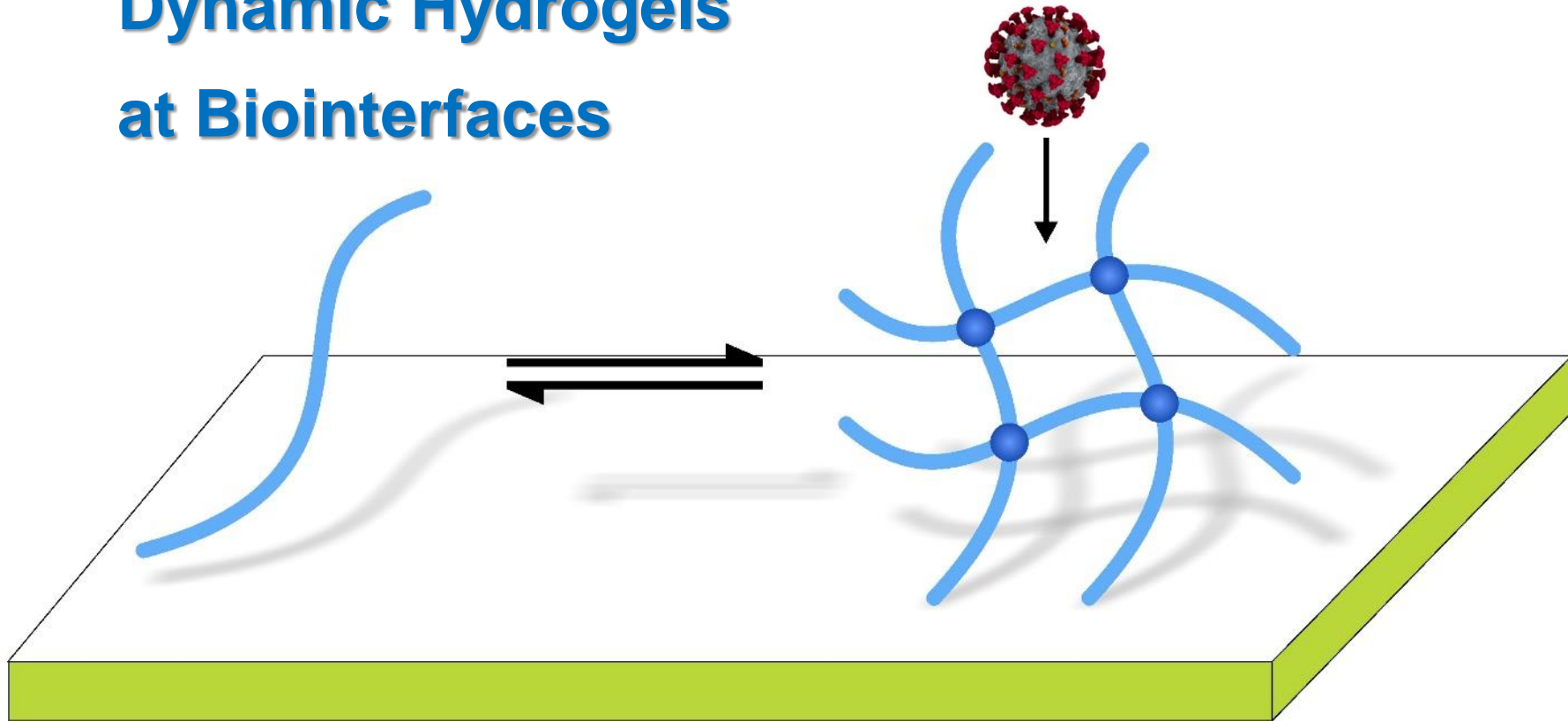




Clausen et al., *Cell*, 2020



Dynamic Hydrogels at Biointerfaces

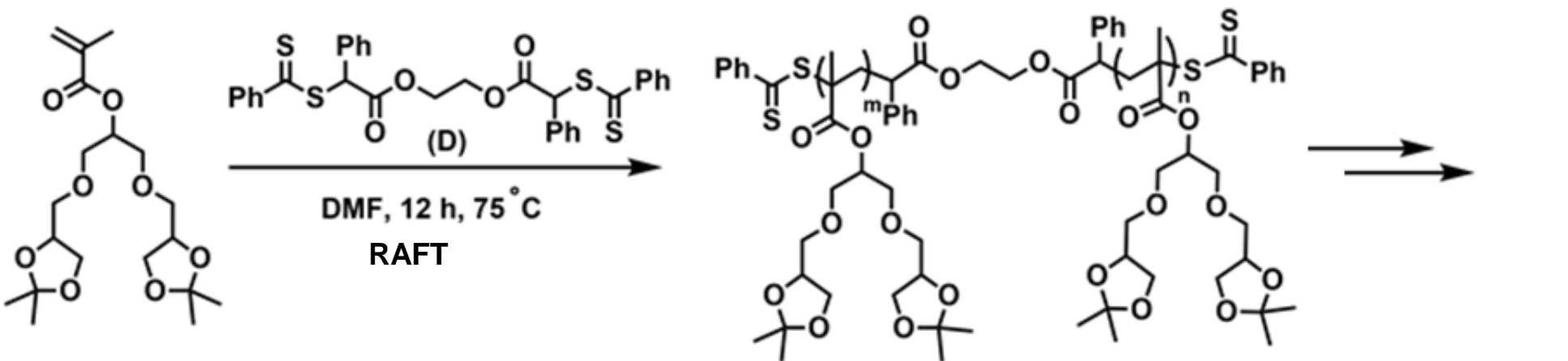


www.sfb1449.de

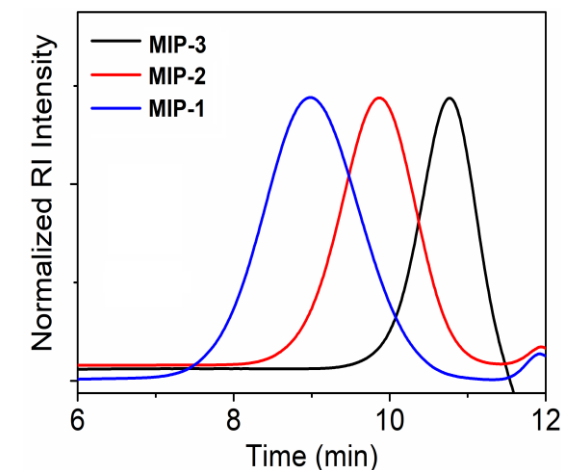
Mucin-Inspired Polymer (MIP) Synthesis (20.0 g scale)



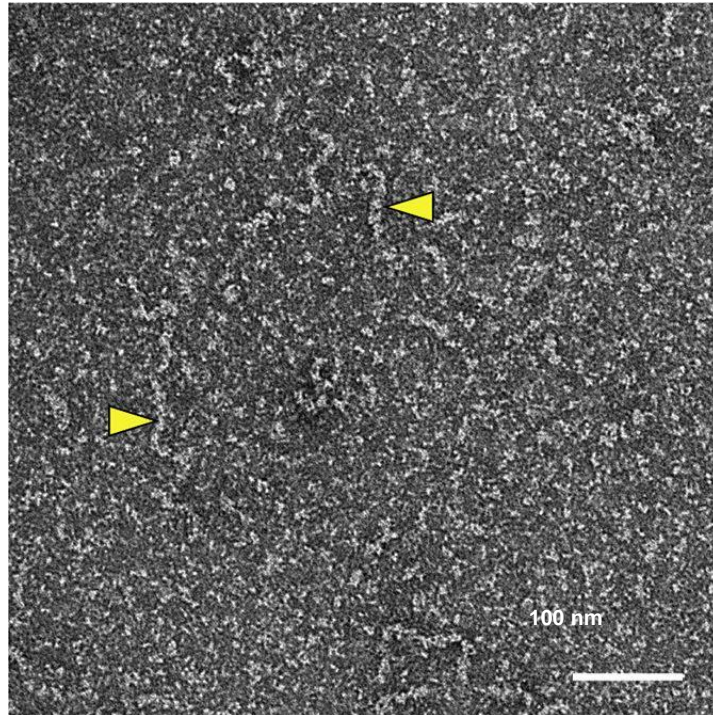
Dr. Raju Bej
(AvH Fellow)



MIP-1_450 kDa
MIP-2_150 kDa
MIP-3_45 kDa

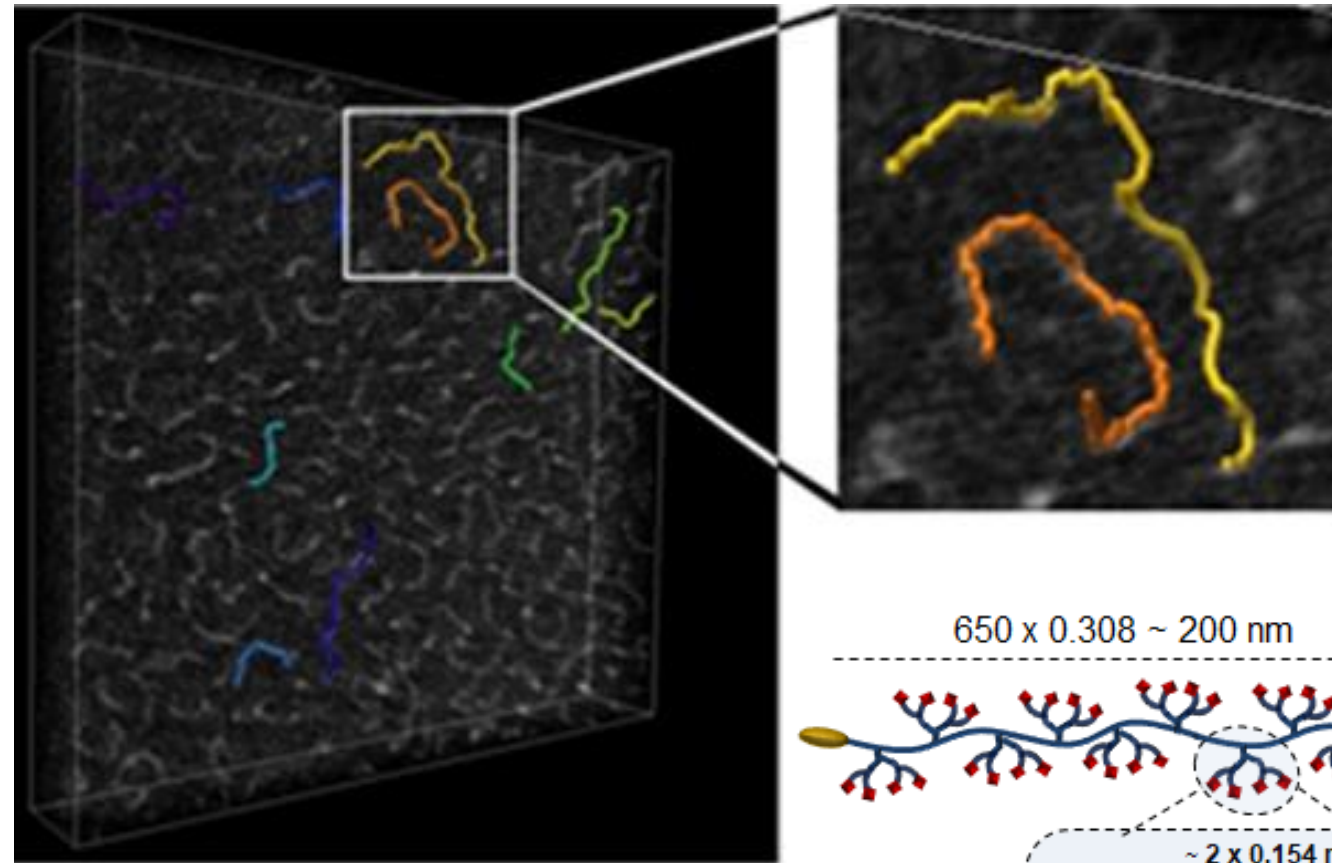


Native Mucins MUC 5B



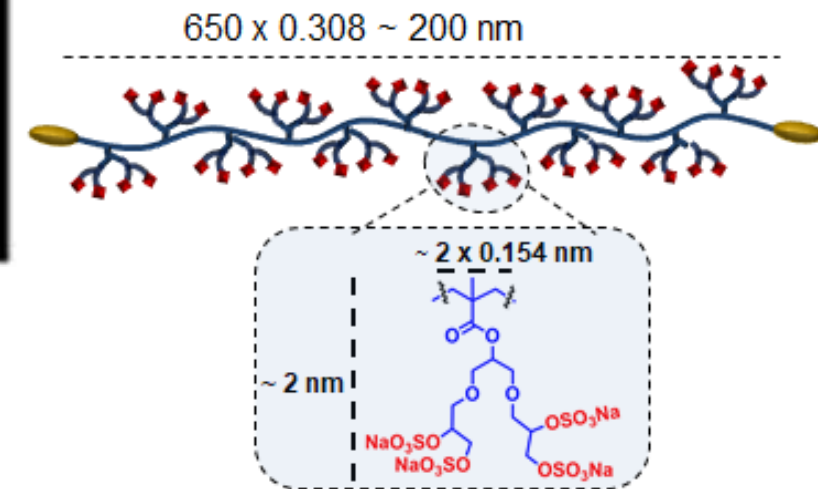
Fiber length = 100-200 nm

Javitt et al. *Cell* 2020, 717-726.e16

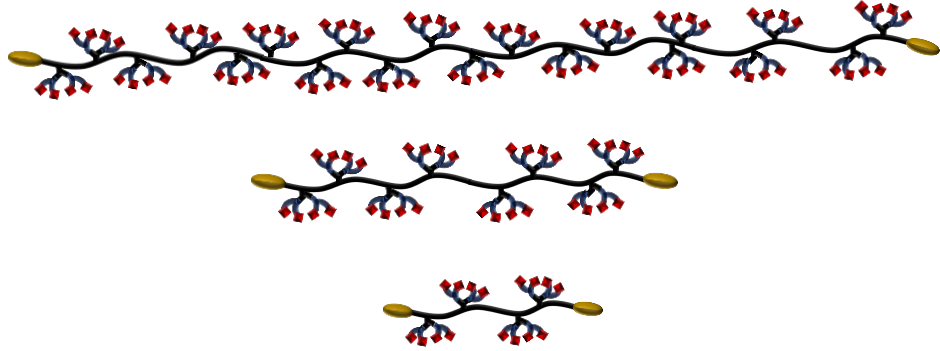


Single chain fiber length

150 ± 49 nm

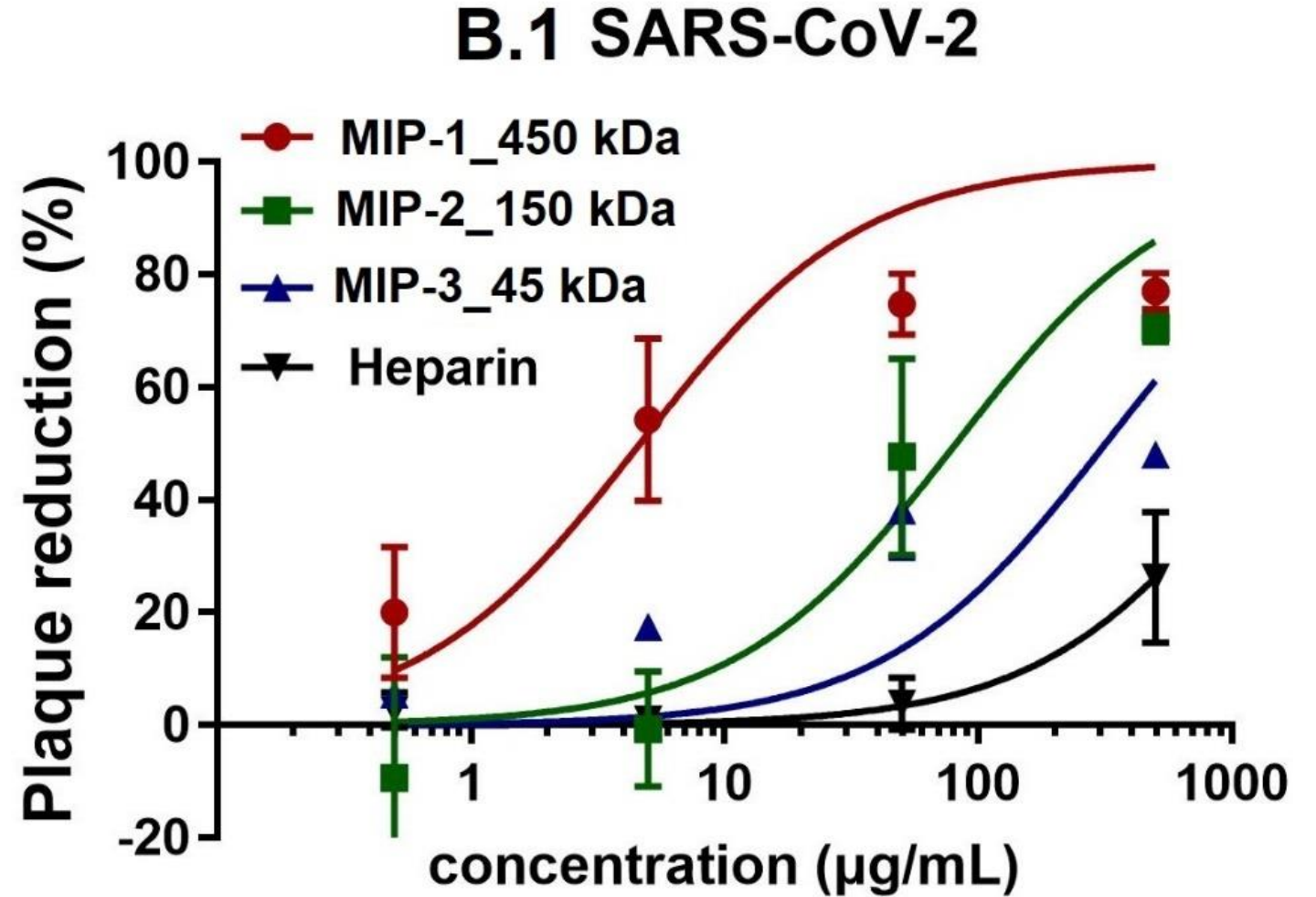


Plaque reduction assay:



➤ Length Dependent SARS-CoV-2 inhibition

Polymers	IC ₅₀ (μg/mL)
MIP-1_450 kDa	4.6 ± 1.4
MIP-2_150 kDa	81.6 ± 21.2
MIP-3_45 kDa	317.1 ± 102.9
Heparin	1400.0 ± 259.9
BSM	443 ± 259.9





www.polytree.de

International Cooperation Partners

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Francesco Stellacci (EPFL), Chong Cheng (Sichuan)
Jay Kitzhakedathu (UBC Vancouver), Sunil Sharma (Delhi)



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