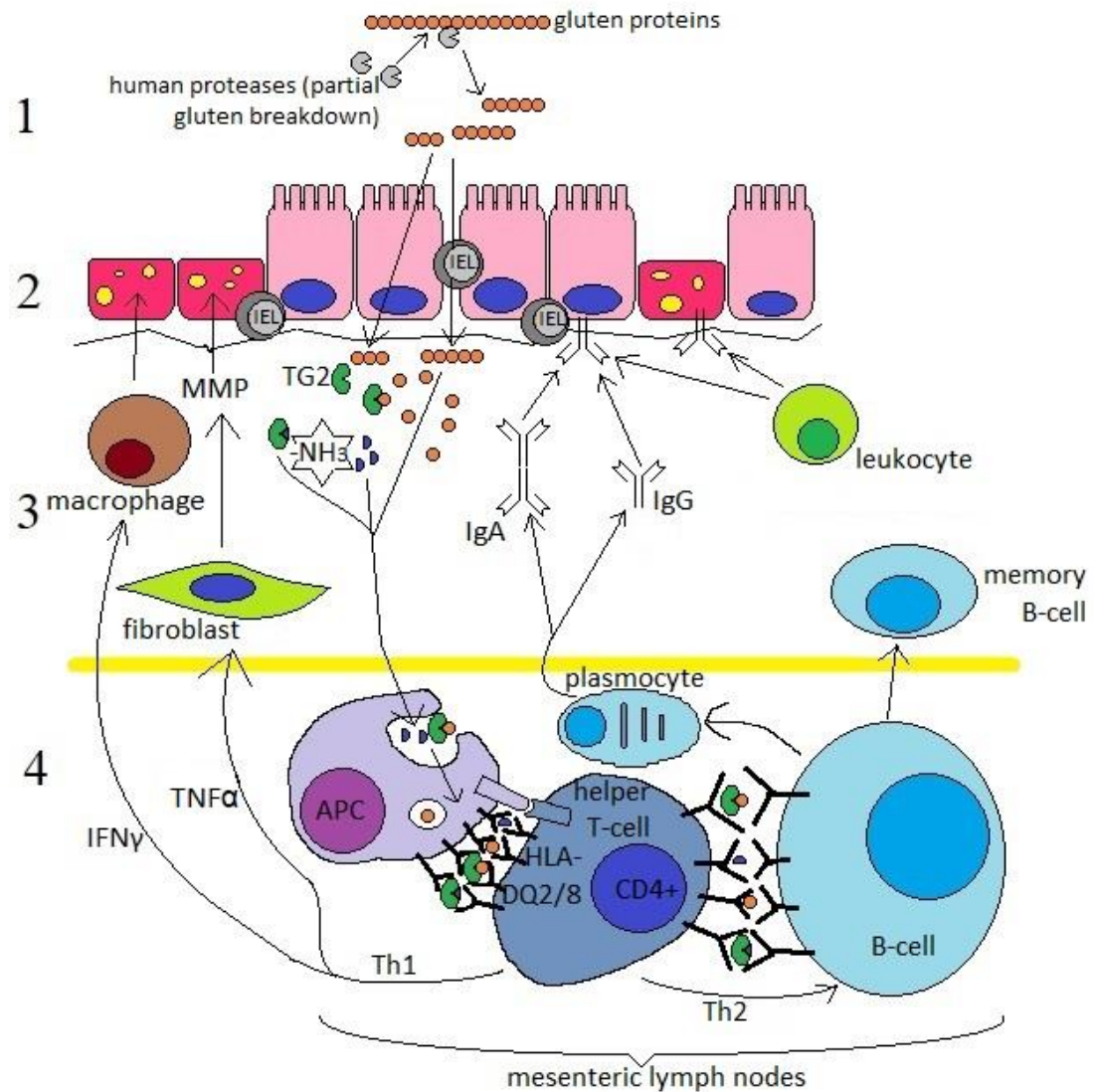


Elucidating the Distinctions Between Open-State Monomers and Dimers of Human Tissue Transglutaminase

Authors: Sergey Ivashchenko, Alexey Vlasov

Dubna, 2023

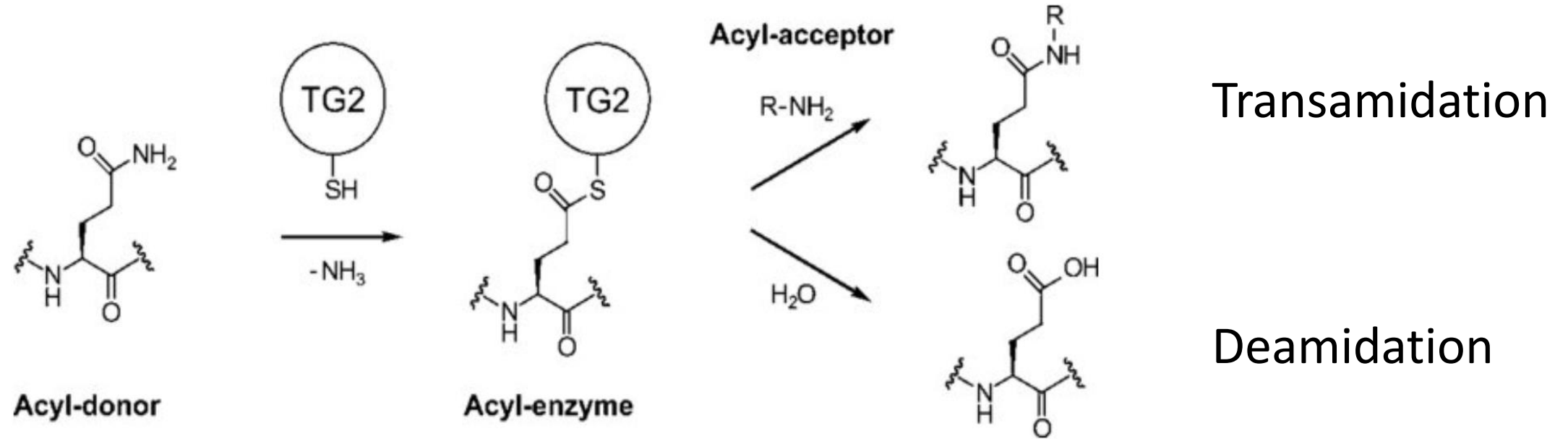
Celiac sprue



Stages of molecular mechanism:

- 1) Partial proteolysis
- 2) Transport of oligopeptides
- 3) Connection to tissue transglutaminase (TG2)
- 4) Interaction with APC cells
- 5) Autoimmune reaction

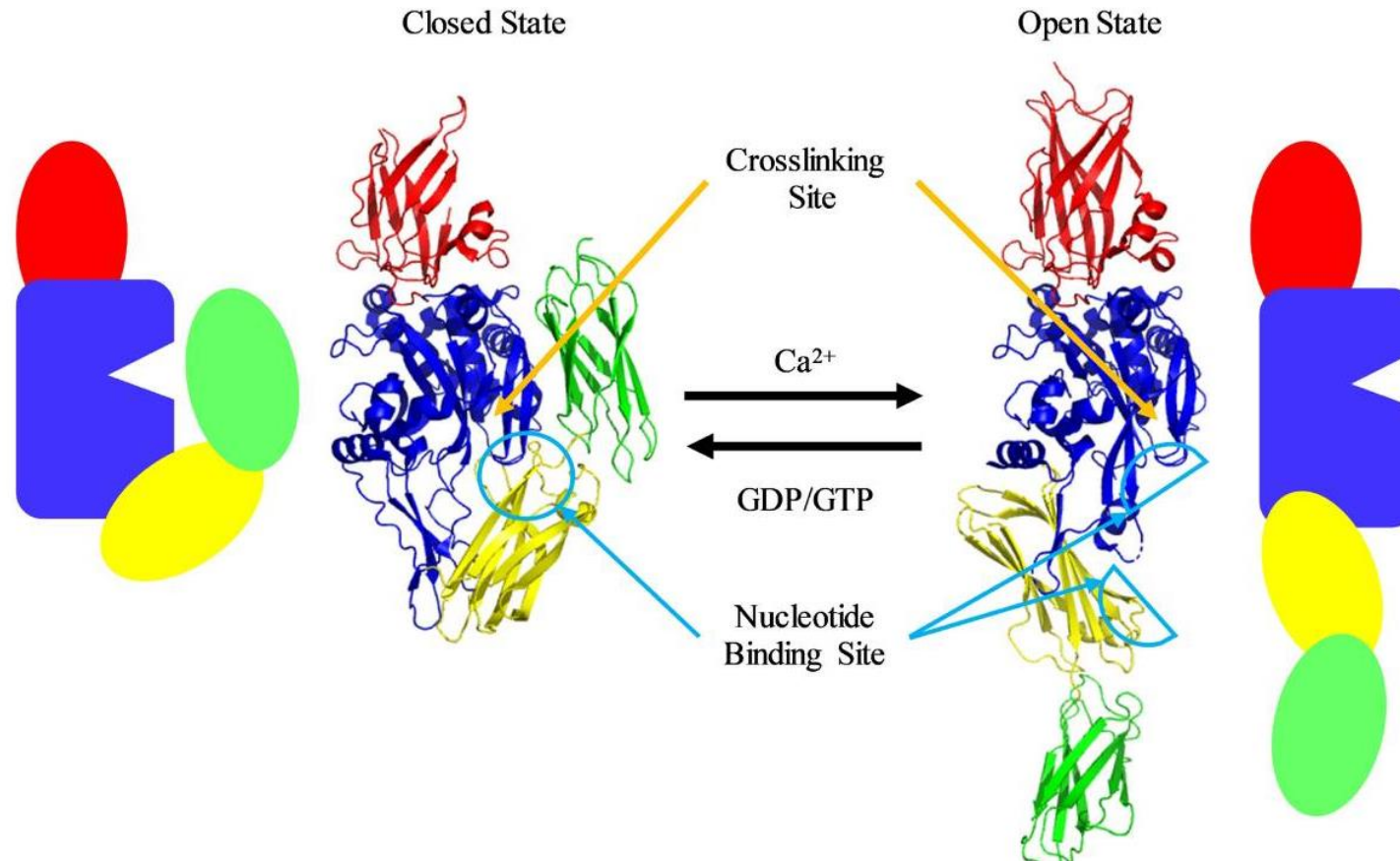
Deamidation and transamidation



Opening up about Tissue Transglutaminase: When Conformation Matters More than Enzymatic Activity

Katt, W. P., Antonyak, M. A., Cerione, R. A. Med One, 2018.

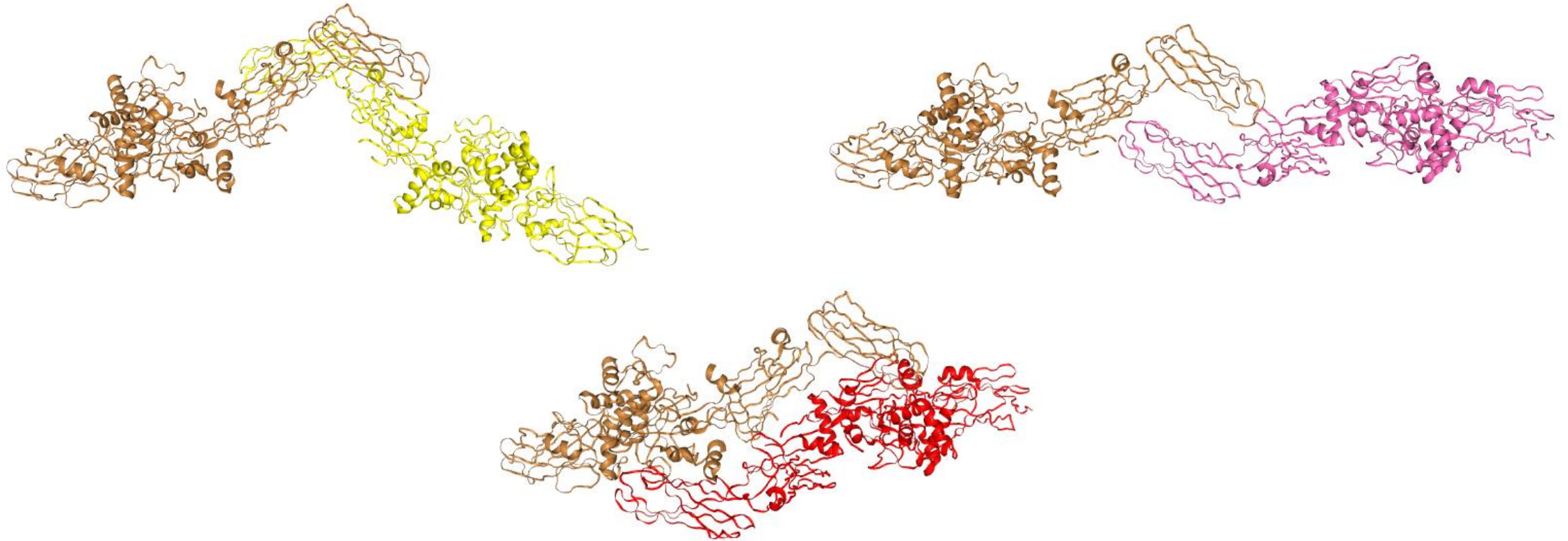
Open and closed form of TG2



Opening up about Tissue Transglutaminase: When Conformation Matters More than Enzymatic Activity

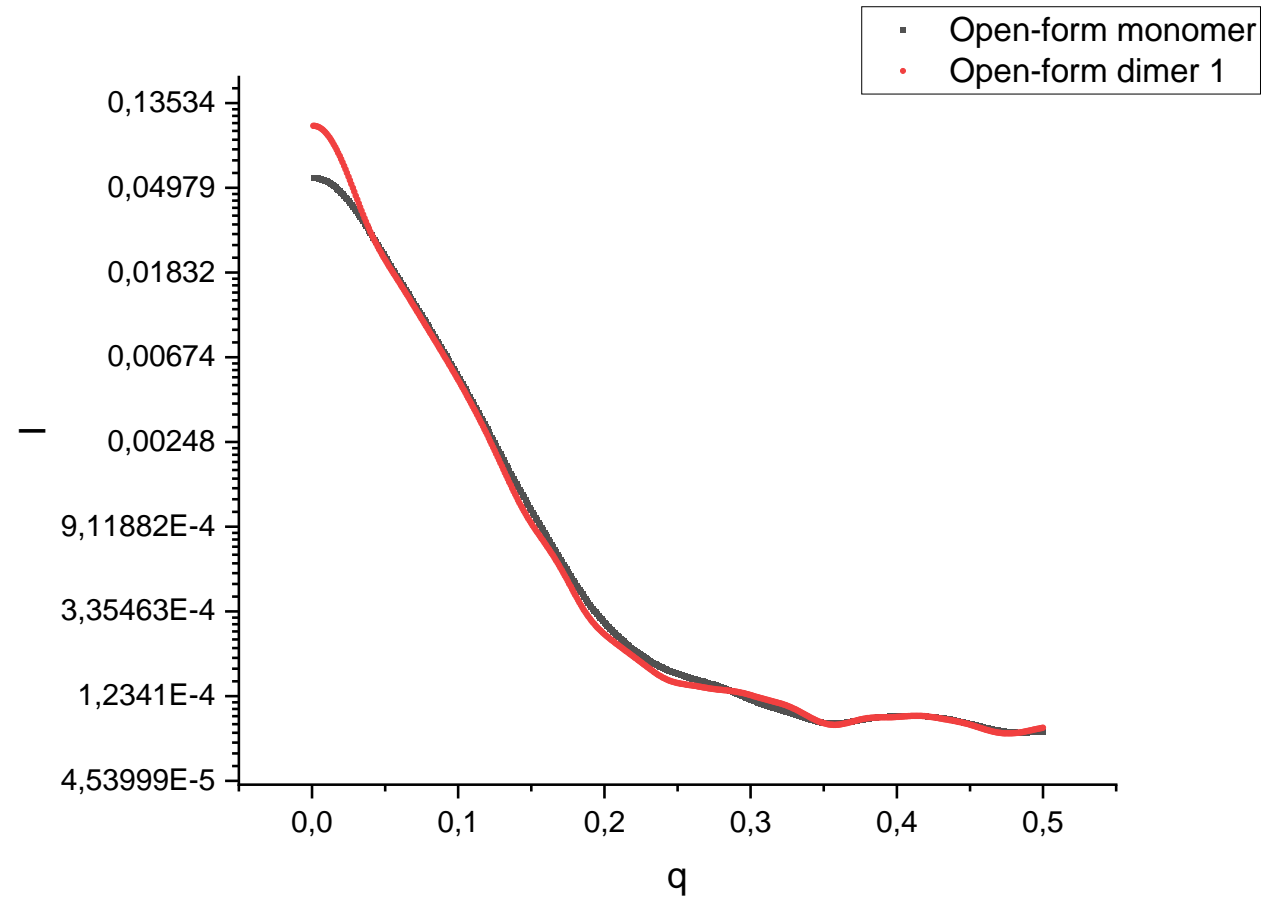
Katt, W. P., Antonyak, M. A., Cerione, R. A. Med One, 2018.

Oligomers of TG2

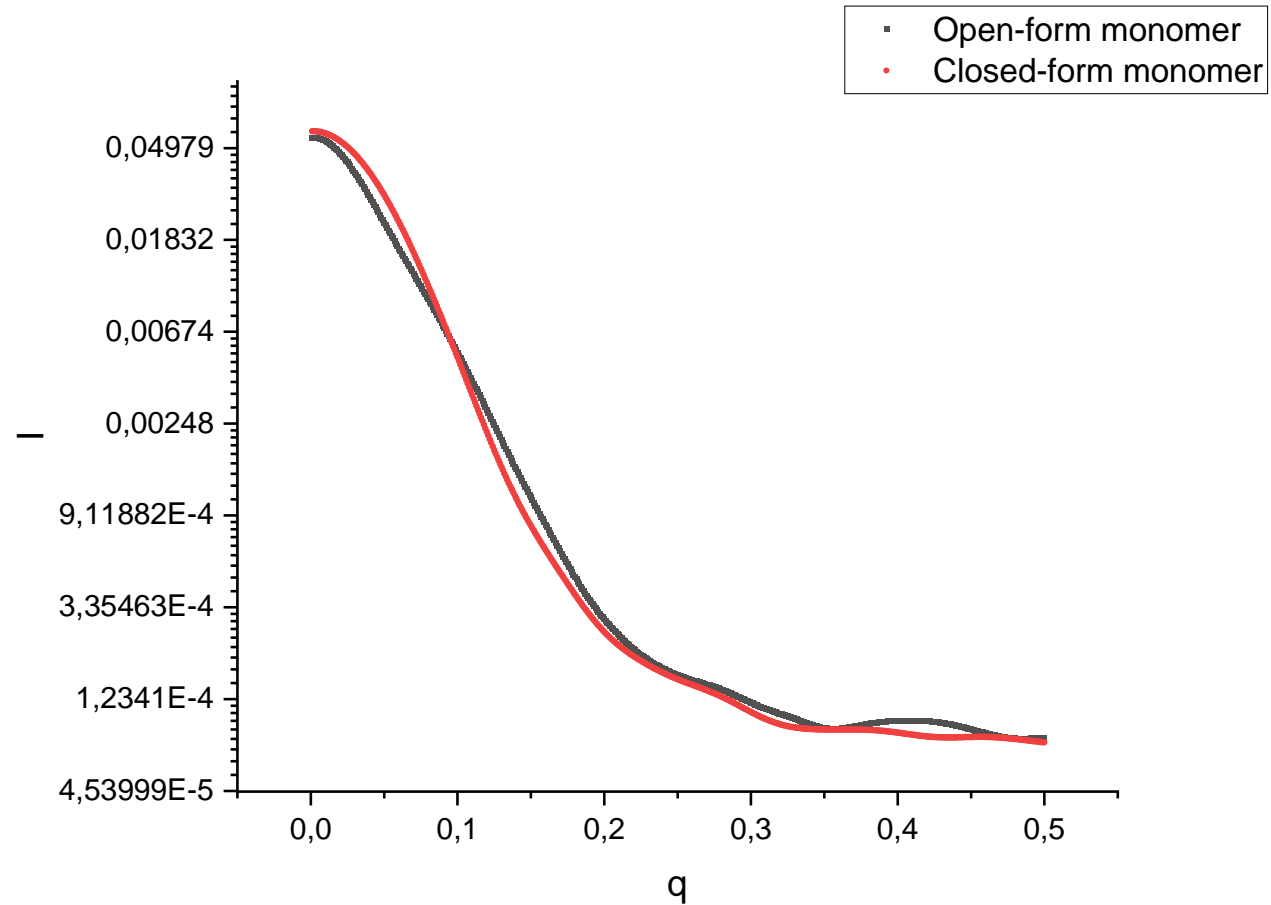


3 models of open-form TG2 dimer by HDock

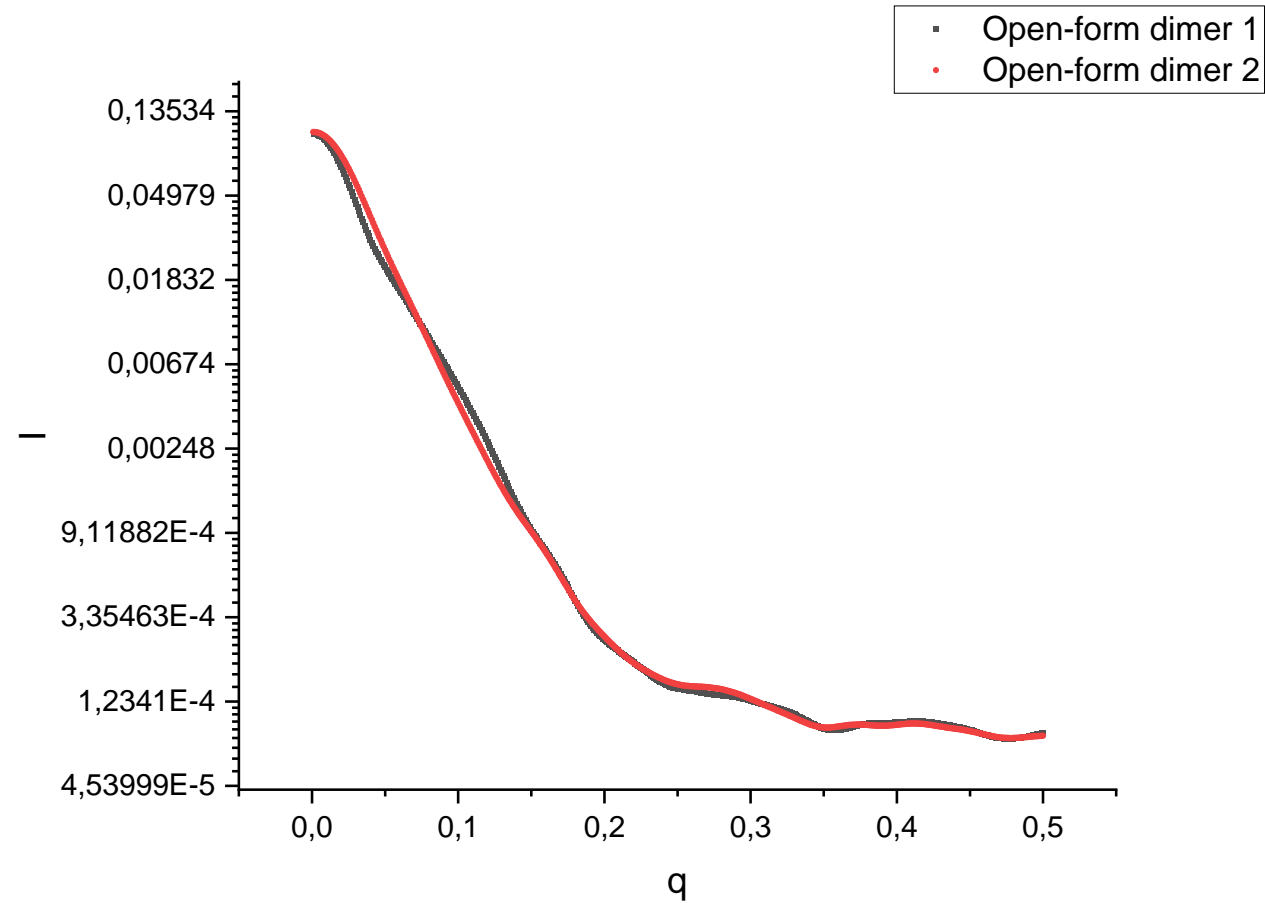
CRYSOL predictions



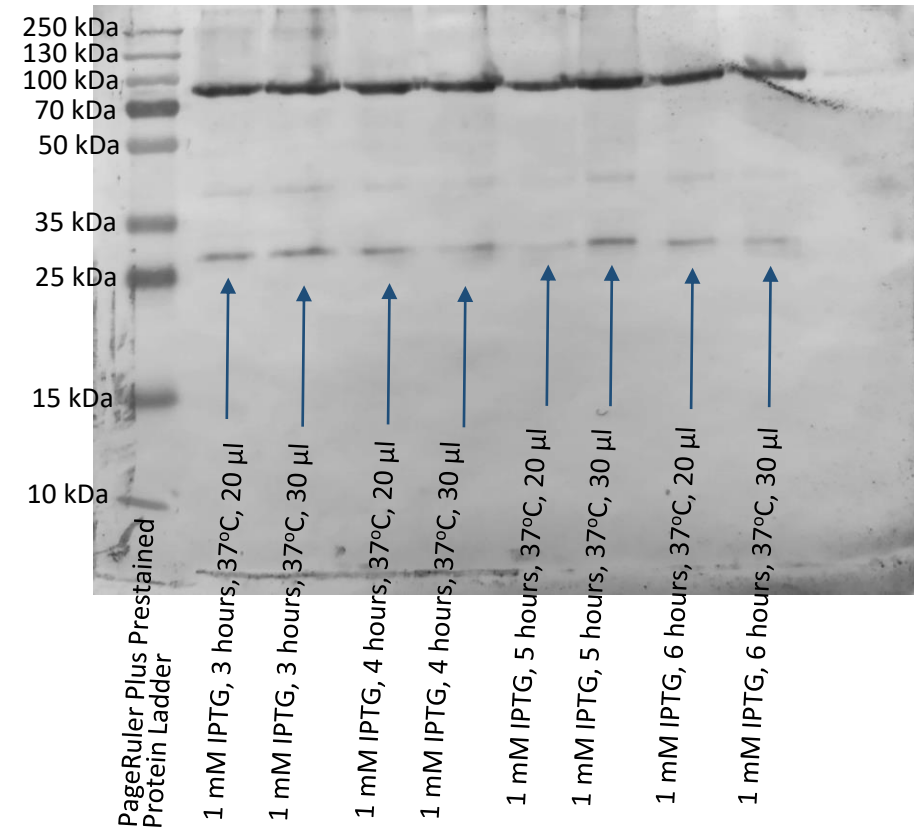
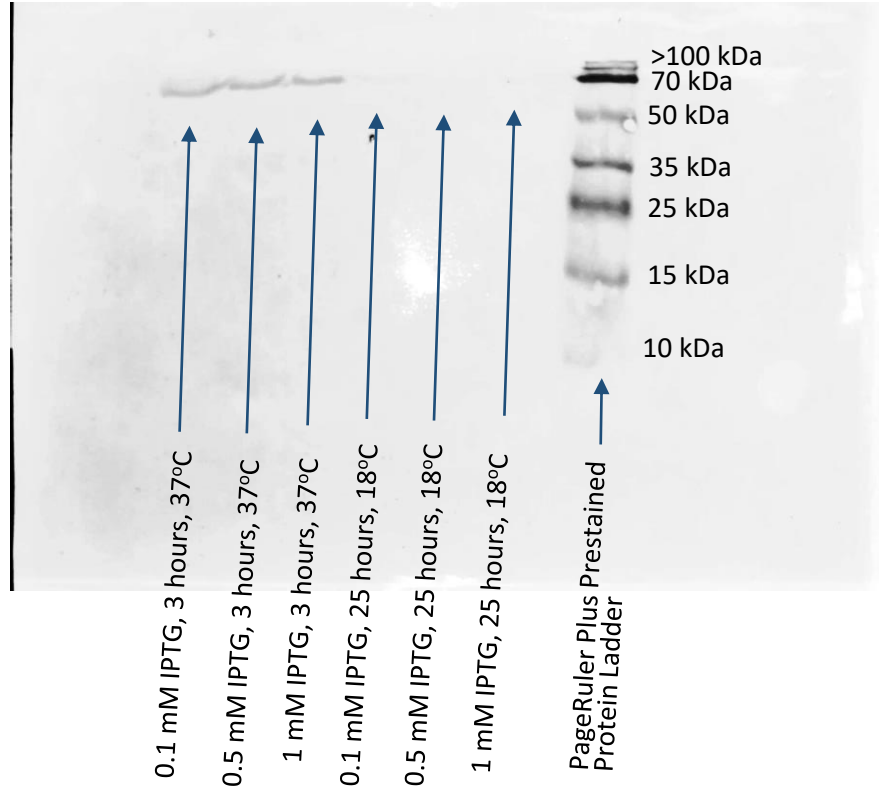
CRYSOL predictions



CRYSOL predictions



Protein extraction and purification



Thank you for your attention