# Conformational changes of PGL-3 upon crowding and phase separation

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## ABSTRACT

PGL-3 has been identified as a scaffold protein of cytoplasmic RNA-protein granules in C. elegans [1]. Its intrinsically disordered C-terminal domain, which is reminiscent of a polyelectrolyte, is coupled to a well-folded dimerization domain [2]. The latter has been hypothesized to be crucial to PGL-3 RNase activity [2]. In addition, PGL-3 phase separates in vitro in a UCST fashion and droplets have exhibited salt-dependent ageing [3]. The questions we aim to address are whether and how are the disordered domains' conformations altered in the dense environment of the dense phase and how does ageing arise? Using scattering (SAXS and SANS) and single molecule experiments (FCS and smFRET) what can we learn about the internal friction due to the chains, RNAase activity, and the conformational changes taking place upon crowding?

### REFERENCES

If necessary, provide **up to 3** references in the format below: **font style Arial, font size "8".**

[1] Fritsch A, et al. 2021. *PNAS,* **118** (37), e2102772118.
[2] Aoki S.T. et al, 2016. *PNAS*, **113** (5), 1279-1284
[3] Jawerth L. et al, 2020. *Science,* **370** (6522), 1317-1323