Molecular bases of proteome adaptation to high pressure in extremophilic Archaea

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What is the adaptation strategy to high pressure in Thermococcales?

Whole genome comparative studies failed (crossover adaptation?)

Whole cells

Neutron Scattering study on nearly isogenic species

New approach
Study of the dynamical properties of single proteins (Phosphomannose Isomerasers) belonging to the two species

EINS on IN13
283-363 K, 1-600 bar
Two-state model

QENS on IN5
283-363 K, 1-300 bar
Rotations + Hall-Ross

Profound differences in:
- Dynamics
- Pressure response
- Interaction with water

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References
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