Structural biology and Biophysical investigation of protein-protein interaction & protein-ligand interaction are relevant to both forward (phenotypic assay-based) & reverse (molecular targeted) chemical genetic approaches for:

- Target identification & target structural/functional characterisation.

- Elucidation and/or validation of the small-molecule mechanism of action: competitive or allosteric binding.

- Structure Activity Relationship (SAR) to support chemical design of new generations of compound libraries for LI and LO.

Resources at KI:

- Core Facilities: Protein Science Facility at MBB

- Academic Research Group: Adnane Achour Research Group
The Adnane Achour’s Group possess theoretical and hands-on competence in the following technologies:

✓ Production of soluble proteins using bacterial and mammalian systems
✓ Refolding of unsoluble proteins

✓ Isolation of specific protein populations using different chromatography systems including Size-Exclusion Chromatography (SEC), Ion Exchange Chromatography (IEC)

✓ X-ray crystallography (access to two different robots at Solna & Huddinge)
✓ Full access to synchrotrons in Grenoble, Berlin, Hamburg and Lund

✓ Surface Plasmon Resonance (SPR, ‘Biacore’) at SciLife & KTH
✓ Isothermal Calorimetry (ITC)
✓ Light Scattering
✓ Circular Dichroism (CD)
✓ Analytical Ultra Centrifugation (AUC)

✓ Small Angle X-ray Scattering (SAXS)
✓ Flow Cytometry (FACS)