

# **Protein conformations and ligand binding studied by Ion-mobility Tandem Mass Spectrometry**



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We are interested in studying the conformational flexibility and structural change which many proteins undergo upon binding of ligands such as metal ions or small molecules, or when they interact with peptides and other proteins. While ligand binding is often studied in minute detail using established biophysical techniques, in particular x-ray diffraction, many proteins are not amenable to these approaches or require great effort. Ion mobility measurements in conjunction with Q-TOF tandem-MS promise to yield a global picture of such transitions, and in addition they are fast and can be integrated into standard proteomics procedures easily. We will show examples of protein conformational flexibility and transitions upon complexation, for kinases as well as other enzymes. We will also discuss the usefulness of this approach for structural determination of macromolecular complexes.

**Date: Mon, 2 March 2009**  
**Time: 11am**  
**Venue: DBS Conference Room**  
**Host: Dr Ganesh Anand**