

**P046** Mass spectrometric analysis of competition among metallo-intercalators and PU.1 transcription factor for DNA  
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PU.1 is an ETS family transcription factor that has been implicated in malignant processes such as the development of erythroid leukemia and Ewings sarcoma. The ability of metallointercalators to compete with transcription factor PU.1 for its DNA binding sequence was analysed by mass spectrometry (ESI-MS). Metallointercalators encompass a large family of metal complexes that usually bear at least one planar intercalating ligand which can readily  $\pi$ -stack in the major groove of DNA, inducing unwinding, lengthening and bending of the DNA molecule. We report here using ESI-MS the observation of competitive binding of metallointercalators  $[\text{Ru}(\text{phen})_2\text{dppz}]^{2+}$  and  $[\text{Pt}(\text{en})(5,6\text{-Me}_2\text{phen})(\text{SS-dach})]^{2+}$  against the ETS domain of mouse transcription factor PU.1 (113 residues) to DNA recognition sequence. Total inhibition of protein binding was observed at high metal concentrations (30  $\mu\text{M}$ ). These metal complexes have potential as scaffolds for the development of complexes with higher affinity for DNA at transcription factor binding sites. These results demonstrate that ESI-MS can be used as a rapid screen for transcription factor-DNA binding and the inhibition of this interaction by small molecules.