

## Selective Heavy Metal Chelators for Binding of Lead and Other Heavy Metals

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Heavy metal poisoning is a significant environmental issue. In particular, lead poisoning is one of the major pediatric health problems in the US. Lead poisoning in New York City remains a problem due largely to the widespread presence of old dwelling units, their lead-based water distribution systems and contaminated bodies of water. Our research is focused on finding suitable chelators for heavy metals such as lead, cadmium and mercury. We design and synthesize ligands that we anticipate to bind these heavy metals strongly and selectively and, carry out characterization studies with these metal bound chelators to evaluate their properties as strong, selective, heavy metal chelators. In this regard, we have designed a series of ligands and are in the process of synthesizing them. The very first ligand in this series has been synthesized and its heavy metal chelating properties are being investigated. We are also carrying out relevant kinetic studies with this metal-chelator complex in order to ascertain its mechanism of metal binding. We wish to present our binding and selectivity studies and, kinetic studies of this ligand with respect to heavy metals, especially lead.