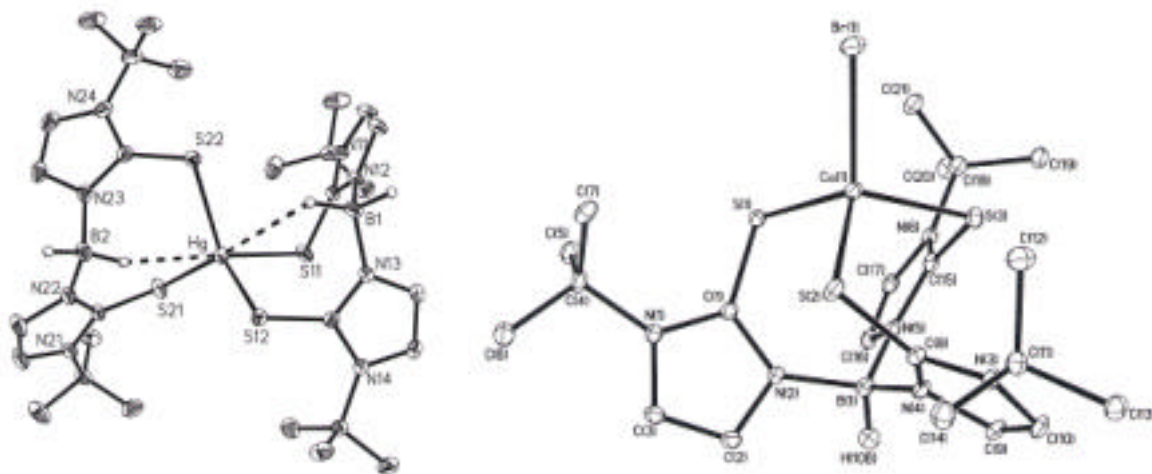


### 3. Poly(mercaptoimidazolyl)borates

Introduced by Reglinski in 1996, the tris(mercaptoimidazolyl)borates ( $\text{Tm}^{\text{R}}$ ) are more polarizable (“soft”) analogues of the ubiquitous Tp ligands. We have contributed several new members (*e.g.*,  $\text{R} = \text{Bz}$ ,  $\text{Bu}^t$ ,  $p\text{-Tol}$ ) to this family of ligands and have also synthesized sodium and thallium derivatives of the corresponding bis(mercaptoimidazolyl)borates ( $\text{Bm}^{\text{R}}$ ). Recent advances in the coordination chemistry of these ligands include the syntheses of homoleptic derivatives  $\text{M}(\text{Bm}^{\text{R}})_2$  ( $\text{M} = \text{Mn}$ ,  $\text{Fe}$ ,  $\text{Co}$ ,  $\text{Ni}$ ,  $\text{Zn}$ ,  $\text{Cd}$ ,  $\text{Hg}$ ,  $\text{Pb}$ ) and the preparation of well-defined complexes  $(\text{Tm}^{\text{R}})\text{MX}$  ( $\text{M} = \text{Co}$ ,  $\text{Zn}$ ,  $\text{Cd}$ ,  $\text{Hg}$ ) with a variety of monoanionic ligands X (halides, thiolates, dithiocarbamates, xanthates, etc.).



Molecular structures of  $\text{Hg}(\text{Bm}^t\text{Bu})_2$  and  $(\text{Tm}^t\text{Bu})\text{MBr}$ .

#### Some relevant publications:

“Synthesis and Characterization of Two New Bulky Tris(mercaptoimidazolyl)borate Ligands and their Zinc and Cadmium Complexes” Bakbak, S.; Bhatia, V. K.; Incarvito, C. D.; Rheingold, A. L.; Rabinovich, D. *Polyhedron* **2001**, *20*, 3343-3348.

“Synthesis and Characterization of Novel Mononuclear Cadmium Thiolate Complexes in a Sulfur-Rich Environment” Bakbak, S.; Incarvito, C. D.; Rheingold, A. L.; Rabinovich, D. *Inorg. Chem.* **2002**, *41*, 998-1001.

“Bulky Tris(mercaptoimidazolyl)borates: Synthesis and Molecular Structures of the Group 12 Metal Complexes  $(\text{Tm}^t\text{Bu})\text{MBr}$  ( $\text{M} = \text{Zn}$ ,  $\text{Cd}$ ,  $\text{Hg}$ )” White, J. L.; Tanski, J. M.; Rabinovich, D. *J. Chem. Soc., Dalton Trans.* **2002**, 2987-2991.

“Homoleptic Group 12 Metal Bis(mercaptoimidazolyl)borate Complexes  $\text{M}[\text{Bm}^{\text{R}}]_2$  ( $\text{M} = \text{Zn}$ ,  $\text{Cd}$ ,  $\text{Hg}$ )” Alvarez, H. M.; Tran, T. B.; Richter, M. A.; Alyounes, D. M.; Rabinovich, D.; Tanski, J. M.; Krawiec, M. *Inorg. Chem.* **2003**, *42*, 2149-2156.

“Bis(mercaptoimidazolyl)borates and the Control of Nuclearity in Cadmium Thiolate Complexes” Philson, L. A.; Alyounes, D. M.; Zakharov, L. N.; Rheingold, A. L.; Rabinovich, D. *Polyhedron* **2003**, *22*, 3461-3466.