1-Hydroxyimidazole-3-oxide (1) was alkylated with benzyl bromide in the presence of NaHCO₃ to give the new 1,3-di(benzyloxy)imidazolium bromide 2a which was converted to the hexafluorophosphate 2b and bis(trifluoromethylsulfonyl)imide 2c. From this cation, pyridine generated a carbene which was trapped by sulfur or selenium to yield the respective 2-thione 3 or 2-selone 4. Bromination afforded the 2-bromo derivative 5. Reaction of the hexafluorophosphate 2b with silver oxide gave the silver-N-heterocyclic carbene complex 6 which was transmetallated with Au(Me₂S)Cl to the gold-carbene complex 7. A rhodium-carbene complex 8 was obtained by reaction of the hexafluorophosphate 2b with [Rh(cod)Cl]₂ in the presence of triethylamine. Eight crystal structures were determined by X-ray diffraction. The N-benzyloxy groups are twisted out of the plane of the imidazole ring in the solid state. They adopt syn conformations in the cation of the hexafluorophosphate 2b and in the metal-carbene complexes 6–8, but anti conformations in the thione 3 and selone 4. Both conformations were observed in two polymorphs of the 2-bromo compound 5.

Key words: Carbene, Gold, Imidazolium Salt, Ionic Liquid, NHC, Rhodium, Silver