Title: Binding Modes and Reactivity of Pyrido[2,1-a]isoindole as a Neutral Carbon Donor with Main Group and Transition Metal Elements.

Abstract: Various binding modes of pyrido[2,1-a]isoindole with main group and transition metal elements have been established. The carbon atom at position 6 of pyrido[2,1-a]isoindole is highly nucleophilic, forming a complex with Pt(II) ions. The benzene ring of pyrido[2,1-a]isoindole forms a complex with Cr(0). The reaction of pyrido[2,1-a]isoindole with PPh₂Cl in the presence of “proton sponge” leads to a PPh₂-functionalized product, which can further react with a BH₃ molecule, forming a P–B adduct. Pyrido[2,1-a]isoindole was also found to undergo dehydrogenative C–C coupling reaction in the presence of Cu(I) ions, forming a dimer. These interesting reactivities and binding modes demonstrate the rich chemistry of pyrido[2,1-a]isoindole, as well as their potential application in main group and transition metal chemistry.