

## Pyridine alcohols: New applications reviving interest in metal complexes of a classical ligand

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Pyridine-based alcohols and their metal complexes show unique characteristics, such as redox activity, variable coordination modes, and reactivity towards organic substrates, resulting in multifaceted properties and diverse applications. This review explores the structural properties of these ligands when coordinated to metal ions, particularly focusing on their ability to form mononuclear and polynuclear complexes with transition metals such as copper, manganese, nickel, and cobalt. Moreover, square planar complexes with silver, platinum, palladium, and gold are discussed as well. Structural studies have revealed various coordination geometries of these complexes, providing insights into their potential applications in various fields. We focus mainly on recent literature (2014–2024) and describe the structural and biological effects of the complexes. Despite the seeming obscurity of pyridine alcohol derivative ligands, we wish to emphasize their potential and the significant applications reported, highlighting the renewed interest in synthesizing coordination complexes with various metal ions.

### Słowa kluczowe

Pyridyl alcohol compounds, Structural properties, Metal complexes, Anticancer/antibacterial properties

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