

Introducing Cinchona Alkaloid Appended Thiol(s) in Gold Nanocluster Chemistry

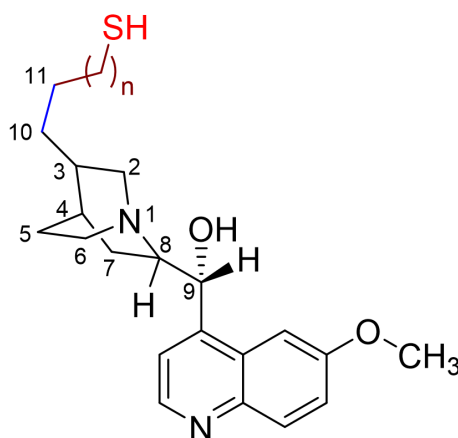
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Cinchona alkaloids represent a diverse class of naturally occurring compounds that have been extensively studied and utilized in various fields of chemistry and biochemistry over the past two centuries.^{1,2} These versatile molecules have demonstrated a wide range of applications, including their use as chiral organocatalysts, ligands, chromatographic selectors, antimalarial drugs, and NMR discriminating agents.

Our research aims to further explore the potential of cinchona alkaloid-appended thiols with varying chain lengths ($n = 0, 2, 4, \dots$) as chiral ligands in gold nanocluster chemistry, see figure. We plan to synthesize and incorporate these ligands into nanoclusters such as $\text{Au}_{25}(\text{PET})_{18}$ through ligand exchange reactions (LER).³ By introducing these chiral ligands, we aim to investigate their potential applications in enantioselective organocatalysis, NMR discrimination, and other related fields.⁴

In this poster presentation, we will showcase the synthesis of the alkaloid derivative and present its application as chiral ligand on atomically precise gold clusters.



L1 ($n = 0, 2, 4, \dots$)

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[4] Davide Ferri, Thomas Bürgi, Alfons Baiker, *J. Chem. Soc., Perkin Trans.*, **1999**, 2, 1305-1311.