

Gold Complexes in Anticancer Drug Development

Ingo Ott

Institute of Pharmaceutical Chemistry, Technische Universität Braunschweig

Many metal complexes have demonstrated interesting preclinical and clinical results as antitumor drugs and platinum compounds belong to the blockbusters of today's cancer chemotherapy. However, the platinum based treatment of tumors has relevant disadvantages (e.g. severe side effects and resistance development). Thus, the development of novel metallodrugs with a pharmacological profile different from that of the platinum drugs is of special interest in medicinal chemistry and drug design. Among the new non platinum antitumor drugs gold complexes have recently gained considerable attention due to their strong cell growth inhibitory effects, their targeting of the enzyme thioredoxin reductase (TrxR) and the triggering of anti-mitochondrial effects. The spectrum of gold complexes described as antiproliferative compounds comprises a broad variety of different species including many phosphine complexes as well as gold in different oxidation states. This presentation gives an overview of our recent results on gold(I) complexes with naphthalimide or N-heterocyclic carbene (NHC) ligands.