Review

Platinum drugs: from Pt(II) compounds, Pt(IV) prodrugs, to Pt nanocrystals/ nanoclusters

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Abstracts Platinum (Pt) based drugs, such as cisplatin, are widely used as anti-cancer agents, but their severe adverse reactions and resistance of cancer patients have limited their board clinical use. For the last few decades, Pt(II) compounds, Pt(IV) prodrugs as well as smart drug delivery systems have been developed to overcome these problems. However, most conventional strategies rely on the similar anti-cancer mechanism with cisplatin and consequently only achieve limited success. Recently, Pt nanocrystals/nanoclusters (Pt NCs), with a brand new anti-cancer mechanism, have shown a promising potential in targeted cancer therapy, especially in Pt resistance circumvention. This review is helpful to understand the research strategies of Pt drugs, particularly, the recent developments and medical applications of Pt NCs.

Keywords Platinum, Pt(II), Pt(IV), Pt Nanocrystals/Nanoclusters, Pt Resistance, Cancer Therapy