Theragnostic neutral Pt(II) complexes based on 8-aminoquinoline skeleton

Isabella Rimoldi,[1] Giorgio Facchetti,[1] Maria Giovanna Lupo,[2] Nicola Ferri[2]

[1] Dipartimento Scienze Farmaceutiche, Università degli Studi di Milano, Via Golgi 19, 20133 Milano, Italia.

[2] Dipartimento di Scienze del Farmaco, Università degli Studi di Padova,Via Marzolo 5, 35131 Padova, Italia.

Corresponding Author, e-mail: isabella.rimoldi@unimi.it

Theragnostic agents are often used for combining diagnostic and therapeutic approaches. In the last decade, many anticancer compounds bearing both these features were realized using transition metal complexes. In particular, platinum(II) complexes were synthetized considering the possibility to module the electronic and steric features. Recently, we studied two different classes of charged platinum(II) compounds, a positive[1] and a negative charged [2] respectively, characterized by the presence of different types of labile ligands able to amplify the liphofilicity of the compounds, as testified by their major internalization into the cells. Moreover, these classes of anticancer agents have recently emerged for their unconventional mechanisms of action compared to cisplatin-like drugs, their potent cytotoxic activity and their distinctive anticancer spectrum of action. Considering these different aspects, a matching between these classes was realized affording neutral complexes reavealing as good candidates for their anticytotoxic and antiproliferative activities against the orphan triple negative breast cancer (specifically toward resistant MDA-MB-31 cancer cell line).

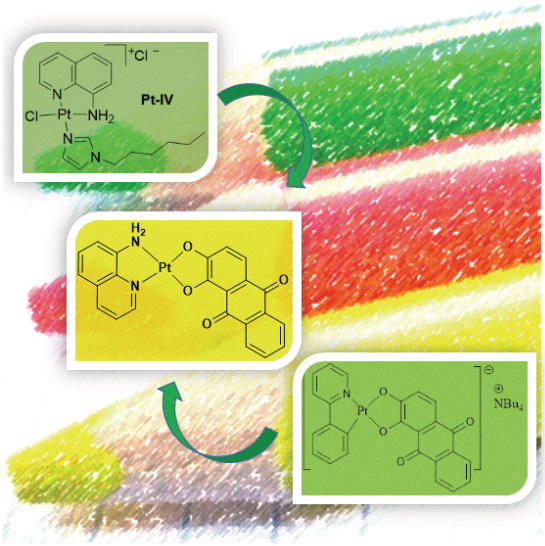

Figura 1. Didascalia.

Riferimenti

[1] Facchetti G, Ferri N, Lupo MG, Giorgio L, Rimoldi I. Monofunctional PtII Complexes Based on 8-Aminoquinoline: Synthesis and Pharmacological Characterization. Eur J Inorg Chem. 2019;2019(29):3389-95.

[2] Ionescu A, Caligiuri R, Godbert N, Ricciardi L, La Deda M, Ghedini M, et al. Cytotoxic performances of new anionic cyclometalated Pt(II) complexes bearing chelated O^O ligands. Appl Organomet Chem. 2020;34(3):e5455.