Indian Journal of Heterocyclic Chemistry
Vol. 35 - Number 03 (Jul-Sep 2025) 587-593
https://connectjournals.com/01951.2025.35.587
https://doi.org/10.59467/IJHC.2025.35.587

ISSN (Print) : 0971-1627
ISSN (Online) : 2456-4311

Flavonols-derived platinum group metal complexes as potential chemotherapeutic agents

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ABSTRACT Platinum group metal (PGM) complexes have attracted a lot of interest in medicinal chemistry, especially in the treatment of cancer, because of their strong cytotoxic qualities. Platinum-based complexes, such as cisplatin, carboplatin, and oxaliplatin, are essential chemotherapeutic medicines that have transformed the treatment of cancer. In the present work, the two chromogenic reagents derived from the flavonol family, *namely*, 3-hydroxy-2-(4-methoxyphenyl)-4*H*-chromen-4-one and 3-hydroxy-2-tolyl-4*H*-chromen-4-one complex have been selected to prepare platinum and iridium complexes. The anti-proliferative potential of the three complexes related with PGMs was investigated against the HaCat cancer cell line by applying Methyl Thiazole Tetrazolium reduction assay. HaCaT cancer cell line is a keratinocyte cell line derived from adult human skin. A comparison between the examined complexes indicated that the complexes of platinum metal in its divalent state have proven to be more potent anti-cancer agents as compared to those of iridium in the metal's trivalent state. The results finally suggested that PGM complexes with a logical design may help create next-generation anticancer medications that are more effective than the existing ones.

KEYWORDS Anti-proliferative, Chromogenic reagents, Flavonols, Iridium, Platinum.

How to cite this article: Devi, K., Agnihotri, N., Kumar, V., and Arora, T. Flavonols derived platinum group metal complexes as potential chemotherapeutic agents, *Indian J. Heterocycl. Chem.*, **2025**, *35*, 587–593. *https://doi.org/10.59467/IJHC.2025.35.587*