



1415
**SYNTHESIS, STRUCTURAL ELUCIDATION, AND IN VITRO
ANTIPROLIFERATIVE AND APOPTOTIC EFFECTS
OF A NICKEL-3-HYDROXYFLAVONE COMPLEX**

Saljooghi, Amir Sh.,^{1,*} Azmoodeh, Shamila¹

¹Chemistry Department, Ferdowsi University of Mashhad, Mashhad, Iran
E-mail: saljooghi@um.ac.ir

Flavonoids are low molecular weight polyphenolic phytochemicals, derived from secondary metabolism of plants and play important role in various biological processes. 3-Hydroxyflavone (3HF; fig. 1) is a chemical compound that it is the backbone of all flavonols, a type of flavonoid. Flavones have antioxidant, anti-proliferative, anti-tumor, anti-microbial, estrogenic, acetyl cholinesterase, anti-inflammatory activities and are also used in cancer, cardiovascular disease, neurodegenerative disorders, etc [1]. The success of cisplatin has triggered intensive work for discovery of new metal-based anticancer drugs [2]. In this study, we evaluated the anti-proliferative and apoptotic effects of nickel complexes including 3-Hydroxyflavone against human cervix epithelial carcinoma (HeLa), cell line and using cisplatin as a comparative standard by MTT assay. Our results presented herein provide experimental evidence that nickel-3HF complex induce apoptosis in cancer cell lines. Our flow cytometry results confirm that, this complex showed a high population of apoptotic cell higher than cisplatin at the same concentration and could induce apoptosis of Hela cancer cells.

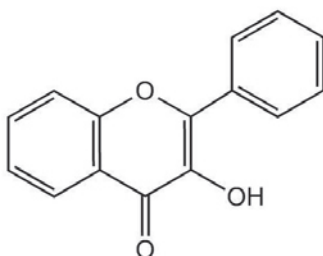


Fig. 1: The structure of 3-Hydroxyflavone (3HF)

References

- [1] Singh, M.; Kaur, M.; Silakari, O. *Eur. J. Med. Chem.* **2014**, *84*, 206-239.
[2] Garbutcheon-Singh, M. B.; Grant, M. P.; Harper, B. W.; Krause-Heuer, A. M.; Manohar, M.; Orkey, N.; Aldrich-Wright J. R. *Current Topics in Med. Chem.* **2011**, *11*, 521-542.