

Synthesis, Characterization and Antioxidant Activity of the Cu(II) Metal Complex with 2-p-Hydroxy Benzoic-4- p-Tolyl Imino-5,7-two Hydroxy Benzopyran as a Ligand Derived from Apigenin

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SUMMARY. Apigenin as a natural flavonoid shows limited antioxidant activities as new drug. The natural flavonoid derivatives as drug have been a hot topic to achieve effective drug innovation. In the paper, a novel Schiff-base ligand, 2-p-hydroxy benzoic-4-p-tolyl imino-5,7-two hydroxy benzopyran, $C_{22}H_{17}O_4N$ (Mr = 359.1) has been synthesized by the condensation reaction of *p*-methyl-anilin and apigenin. The above ligand and its copper (II) complex, $[C_{44}H_{32}O_8N_2Cu]$ has been synthesized and characterize by IR, UV, MS, HNMR, DSC-TGA, etc. The ligand and metal complex exhibit yellow fluorescence under UV light. In addition, the antioxidant activity of the apigenin and its Schiff base metal complex were determined by superoxide and hydroxyl radical scavenging methods *in vitro*. The metal complex was found to process potent antioxidant activity and be better than apigenin.

RESUMEN. Como flavonoide natural, la apigenina muestra actividad antioxidante limitada como nuevo fármaco. Los derivados de flavonoides naturales han sido un tema candente para lograr la innovación efectiva de drogas. En este documento se ha sintetizado un nuevo ligando de base de Schiff, 2-p-hidroxi-benzoico 4-p-tolil-5,7-imino dos benzopirano hidroxilado, $C_{22}H_{17}O_4N$ (Mr = 359,1) por la reacción de condensación de *p*-metil-anilina y apigenina. El ligando y su complejo con cobre (II), $[C_{44}H_{32}O_8N_2Cu]$ ha sido sintetizado y caracterizado por IR, UV, MS, RMN, DSC-TGA, etc. El ligando y el complejo metálico exhiben fluorescencia amarilla bajo luz UV. Además, la actividad antioxidante de la apigenina y su complejo metálico de base de Schiff se determinaron por métodos de barrido de superóxido y radicales hidroxilo *in vitro*. El complejo metálico mostró una potente actividad antioxidante y ser mejor que la apigenina.

KEY WORDS: antioxidant activity; apigenin-Schiff-base, Cu metal complex; synthesis.

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