

Synergistic Effect of Co(II) Coordination Polymers with *Hedyotis diffusa* on Lung Cancer through Regulating the Expression of EMT Protein

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SUMMARY. Two new ternary Co(II)-based coordination polymers (CPs) with the chemical formulae of [Co(5-NIP)(L)(H₂O)]_n (**1**) and [Co(1,4-PDA)(L)(H₂O)]_n (**2**) (L = 1,3-bis(5-methylbenzimidazol-1-yl)propane, 5-H₂NIP = 5-nitroisophthalic acid, 1,4-H₂PDA = 1,4-phenylenediacetic acid) were hydrothermally synthesized by reaction of Co(II) salt with the L ligand in the presence of different carboxylic acid ligands and structurally characterized via the single crystal X-ray diffraction, elemental analysis and the FT-IR. Its synergistically effect with *Hedyotis diffusa* against lung cancer was explored. Firstly, the migration and invasion of the lung cancer cells after compound treatment was determined with trans-well assay. In addition to this, the relative expression of the EMT gene was measured with real time RT-PCR assay.

RESUMEN. Dos nuevos polímeros de coordinación (CP) basados en Co(II) ternarios con las fórmulas químicas de [Co(5-NIP)(L)(H₂O)]_n (**1**) y [Co(1,4-PDA)(L)(H₂O)]_n (**2**) (L = 1,3-bis(5-metilbencimidazol-1-il)propano, 5-H₂NIP = ácido 5-nitroisoftálico, 1,4-H₂PDA = ácido 1,4-fenilendiácético) fueron sintetizados hidrotérmicamente mediante la reacción de la sal de Co(II) con el ligando L en presencia de diferentes ligandos de ácido carboxílico y caracterizado estructuralmente mediante difracción de rayos X de monocristal, análisis elemental y FT-IR. Se exploró su efecto sinérgico con *Hedyotis diffusa* contra el cáncer de pulmón. En primer lugar, se determinó la migración y la invasión de las células de cáncer de pulmón después del tratamiento con el compuesto con un ensayo trans-well. Además de esto, la expresión relativa del gen EMT se midió con un ensayo de RT-PCR en tiempo real.

KEY WORDS: coordination polymer, *Hedyotis diffusa*, lung cancer

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