



## Therapeutic Effect of Co(II) Coordination Polymers on Recurrent Miscarriage by Regulating Immune Factor LN-1 and VEGF Content

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**SUMMARY.** In the present study, via using a mixed ligand synthesis approach, two new Co(II) coordination polymers (CPs) with the chemical compositions of  $[\text{Co}(\mu_3\text{-Hcpoia})(\text{phen})(\text{H}_2\text{O})]_n$  (**1**, phen = phenanthroline) and  $[\text{Co}_2(\mu_4\text{-Hcpoia})_2(\mu_2\text{-bib})(\text{H}_2\text{O})_2]_n$  (**2**, bib = 1,4-di(1H-imidazol-1-yl)benzene) have been successfully prepared via reaction of  $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$  with an asymmetric semirigid tricarboxylate ligand 4-(4-carboxyphenoxy)isophthalic acid ( $\text{H}_3\text{cpoia}$ ) in the presence of different N-donor co-ligands. For the treatment of recurrent spontaneous abortion, their biological activity was evaluated and the related mechanism was explored. The ELISA detection was conducted to determine the content of immune factor LN-1 and VEGF. The real time RT-PCR was finished and the activation of the AMPK signaling pathway was measured.

**RESUMEN.** En el presente estudio, mediante el uso de un enfoque de síntesis de ligandos mixtos, dos nuevos polímeros de coordinación (CPs) de Co(II) con las composiciones químicas  $[\text{Co}(\mu_3\text{-Hcpoia})(\text{fen})(\text{H}_2\text{O})]_n$  (**1**, fen = fenantrolina) y  $[\text{Co}_2(\mu_4\text{-Hcpoia})_2(\mu_2\text{-bib})(\text{H}_2\text{O})_2]_n$  (**2**, bib = 1,4-di(1H-imidazol-1-il)benzeno) se han preparado con éxito mediante la reacción de  $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$  con un ligando tricarboxilato semirrígido asimétrico ácido 4-(4-carboxifenoxi) isoftálico ( $\text{H}_3\text{cpoia}$ ) en presencia de diferentes co-ligandos N-donadores. Para el tratamiento del aborto espontáneo recurrente, se evaluó su actividad biológica y se exploró el mecanismo relacionado. La detección de ELISA se realizó para determinar el contenido de factor inmune LN-1 y VEGF. Se finalizó la RT-PCR en tiempo real y se midió la activación de la vía de señalización AMPK.

**KEY WORDS:** coordination polymers, immune factor, recurrent spontaneous abortion.

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