



Synthesis, structural investigations, DFT studies, and neurotrophic activity of zinc complex with a multidentate ligand

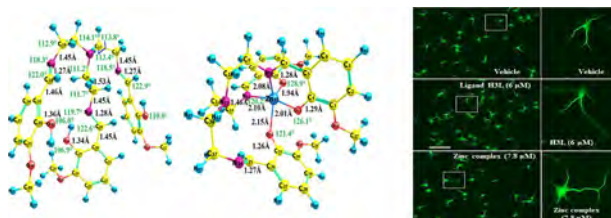
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Abstract

A novel zinc complex derived from a multidentate ligand, nitrilotris(ethane-2,1-diyl)tris(azanylylidene)tris(methanylylidene)-tris(2-methoxyphenol), was designed and structurally investigated by elemental analyses, IR, NMR, ESI-MS, and UV–Vis studies. The density functional theory was also recorded to investigate the additional insights into the structural and electronic properties of the ligand and its complex. Both the ligand and its complex showed significant neurite outgrowth and viability in brain neuron at lower concentration when investigated for neurological properties. Thus, it can be suggested that the ligand and its complex may play a potential role in brain development, functioning as well as in the treatment of neurological disorders.

Graphic abstract



Keywords Zinc(II) complex · DFT studies · Neurotrophic activity

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Introduction

Schiff base ligands, also known as privileged ligands, show a broad range of applications, particularly in food chemistry, organic synthesis, dyes and pigments, catalysis, and various biological applications [1–7]. The biological behaviour

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