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ABSTRACT BOOK

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Synthesis, characterization and crystal structure of *cis*-Bis[4-chloro-*N*-(diphenylcarbamothioyl) benzamido- κ^2 O,S]platinum(II)

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cis-Bis[4-chloro-*N*-(diphenylcarbamothioyl)benzamido- κ^2 O,S]platinum(II) has been synthesized and characterized by elemental analyses, FT-IR and NMR methods. The obtained metal complex was also characterized by a single crystal X-ray diffraction study. Structure of *cis*-bis[4-chloro-*N*-(diphenylcarbamothioyl)benzamide- κ^2 O,S]platinum(II) was confirmed using infrared, ¹H nuclear magnetic resonance, and mass spectral data. Molecule formula of the title compound, C₈₀H₅₆Cl₄N₈O₄Pt₂S₄: triclinic, space group P-1 (no. 2), $a = 9.0138(2)$ Å, $b = 14.9355(3)$ Å, $c = 15.9076(3)$ Å, $\alpha = 109.9660(10)^\circ$, $\beta = 99.5280(10)^\circ$, $\gamma = 104.3810(10)^\circ$, $V = 1874.62(7)$ Å³, $Z = 1$, $\mu(\text{MoK}\alpha) = 4.037$ mm⁻¹, $D_{\text{calc}} = 1.642$ g/mm³, 39243 reflections measured ($3.08 \leq 2\theta \leq 52.74$), 7649 unique ($R_{\text{int}} = 0.0510$) which were used in all calculations. The final R_1 was 0.0370 ($>2\sigma(I)$) and wR_2 was 0.0646 (all data). A square-planar coordination geometry is formed around the Pt atom by two S atoms and two O atoms of the 4-chloro-*N*-(diphenylcarbamothioyl)benzamide ligands, which are in a *cis* configuration. Synthesized compound was tested *in-vitro* against two Gram-positive (*S. aureus* and *S. pneumoniae*) and three Gram-negative bacterial strains (*E. coli*, *P. aeruginosa*, and *A. baumannii*), two fungal strains (*C. albicans* and *C. glabrata*).

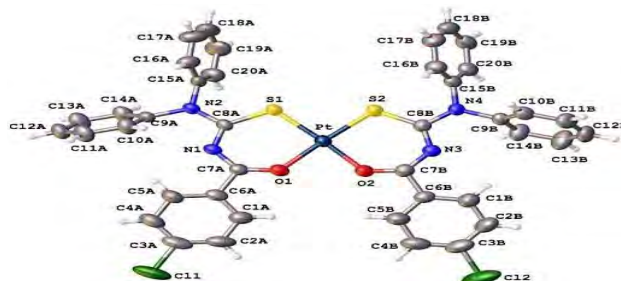


Figure 1. Molecular structure of title compound.

Keywords: Platinum complex, Thiourea, Benzoyl thiourea X-ray single crystal diffraction, Synthesis, Antimicrobial activity.

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