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SYNTHESIS OF N-CYCLOHEXYL-2-[(3-ETHOXY-2-HYDROXYPHENYL) METHYLIDENE] HYDRAZINE-1-CARBOTHIOAMIDE

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The recently studied thiosemicarbazones have exceeded researchers' expectations by demonstrating advanced pharmacological effects, such as anticancer, antibacterial and antioxidant effects.

The paper presents the synthesis of new ligand N-cyclohexyl-2-[(3-ethoxy-2-hydroxyphenyl) methylidene] hydrazine-1-carbothioamide **(H_2L)** obtained through the addition of 2-ethoxy-6-[hydrazinylidenemethyl] phenol to isothiocyanatocyclohexane.

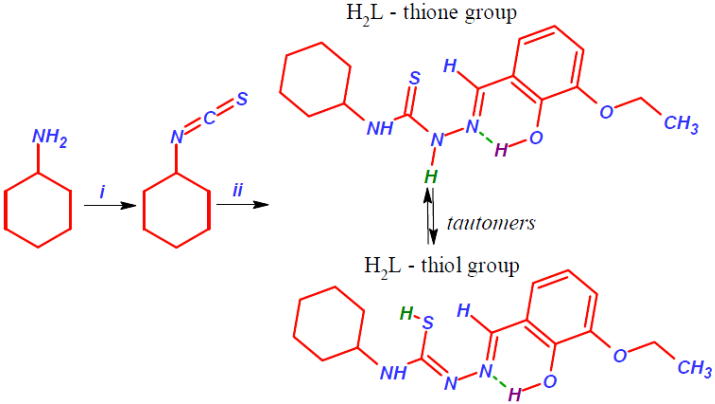


Figure. Synthesis of N-cyclohexyl-2-[(3-ethoxy-2-hydroxyphenyl) methylidene] hydrazine-1-carbothioamide **(H_2L)**
i- *$CSCl_2$, $CaCO_3$, H_2O, (extracts with CH_2Cl_2), 2 h;*
ii- 2-ethoxy-6-[hydrazinylidenemethyl]phenol
(*preferred name - hydrazone to 3-ethoxyalicylaldehyde*) tetrahydrofuran, 1.5 h.

Thiosemicarbazone H_2L was characterized on the basis of various spectroscopic techniques like FTIR, ^1H and ^{13}C NMR studies, elemental analysis. The compound was subjected to antimicrobial and antifungal activity screening using serial broth dilution method. The thiosemicarbazone H_2L showed moderate activity against: *Staphylococcus aureus, Bacillus cereus, Escherichia coli, Acinetobacter baumannii* and *Candida albicans.*

Keywords: antifungal, antimicrobial, dilution method, pharmacological effects, thiosemicarbazone H_2L.