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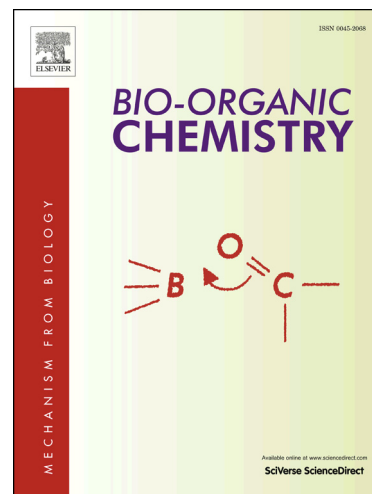
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## Synthesis, Molecular Docking Studies of Hybrid Benzimidazole As $\alpha$ -Glucosidase Inhibitor

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### Abstract

Thiourea derivatives having benzimidazole **1-17** have been synthesized, characterized by <sup>1</sup>H NMR, <sup>13</sup>C NMR and EI-MS and evaluated for  $\alpha$ -glucosidase inhibition. Identification of potential  $\alpha$ -glucosidase inhibitors were done by *in vitro* screening of **17** thiourea bearing benzimidazole derivatives using Baker's yeast  $\alpha$ -glucosidase enzyme. Compounds **1-17** exhibited a varying degree of  $\alpha$ -glucosidase inhibitory activity with IC<sub>50</sub> values between 35.83±0.66 - 297.99±1.20  $\mu$ M which are more better than the standard acarbose (IC<sub>50</sub> = 774.5±1.94  $\mu$ M). Compound **10** and **14** showed significant inhibitory effects with IC<sub>50</sub> value 50.57±0.81 and 35.83±0.66  $\mu$ M, respectively better than the rest of the series. Structure activity relationships were established. Molecular docking studies were performed to understand the binding interaction of the compounds.

**Keywords:** Thiourea, Hybrid, Benzimidazole, Synthesis,  $\alpha$ -Glucosidase Inhibition, Molecular docking

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