

BINDING STUDIES OF 1,1',1''-(NITRILOTRIS(PROPANE-3,1-DIYL))TRIS(3-(4-NITROPHENYL))-BASED UREA AND THIOUREA RECEPTORS FOR ANIONS

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Abstract: The adverse effects of anion overabundance on land and aquatic ecosystems warrant new effective methods of anion detection. Synthetic receptors are emerging alternatives for anion recognition. 4-Nitrophenyl-based urea (**L1**) and thiourea (**L2**) receptors have been synthesized via coupling of tris(3-aminopropyl)amine with 4-nitrophenyl isocyanate or isothiocyanate in dichloromethane. Binding studies for these receptors were carried out in DMSO via UV-Vis and ^1H NMR spectroscopy. Binding trend for these anions is as follows: $\text{F}^- > \text{HSO}_4^- > \text{H}_2\text{PO}_4^- > \text{AcO}^- > \text{Cl}^- > \text{Br}^-$, I^- . Naked-eye colorimetric responses were exhibited upon addition of F^- to receptors in DMSO. Ongoing studies include ^1H -NMR and UV-Vis titrations of receptors with remaining anions.

Keywords: Anion binding, thiourea, tripodal receptor, perchlorate, NMR, UV-Vis, Colorimetric

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