

## SYNTHESIS AND SENSING PROPERTIES OF 4-NITROPHENYL BASED DIPODAL UREA FOR ANIONS

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**Abstract:** Anion binding by synthetic neutral artificial receptors has been a topic of major discussion in recent years because of their significant importance and potential applications in biological, environmental and supramolecular chemistry. These artificial receptors can be used for detection, sensing, extraction, and separation of biologically and environmentally relevant anions. In general, molecules with directional H-bond donors, such as urea are known to bind anions by hydrogen-bonding interactions under neutral conditions. They also benefit from the presence of electron withdrawing oxygen atom, which makes them potential receptors to complex an anion. In an effort to design neutral receptors with multiple binding sites for hosting anionic guests, we have synthesized a dipodal urea-based ligand from the reaction of 2,2'-diamino-N-methyldiethylamine and 4-nitrophenyl isocyanate in dichloromethane, which was studied for a variety of common anionic species by  $^1\text{H}$  NMR and UV-Vis spectroscopy in DMSO. We have also performed naked-eye colorimetric studies of this compound for anions, showing a distinct color change for fluoride and *di*-hydrogen phosphate in solution.

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