Title:	5-Bromo-1H-indol based flexible molecular receptor possessing spectroscopic characteristics for detection of Sm(III) and Dy(III) ions
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Abstract:	We have designed 1,3-bis(4-((E)-((Z)-((5-bromo-1H-indol-3-yl)methylene)hydrazono)methyl)-3-methoxyphenoxy)propane (BIHMPP) molecular receptor that posses π–π* and n–π* electronic transitions as well as PET (photo-induced electron transfer). When the receptor BIHMPP was tested with different metal ions under UV–visible and fluorescence techniques, only the introduction of Sm(III) and Dy(III) ions to the solution showed the change in spectra due to interactions between the receptor and metal ions (Sm(III) and Dy(III)). The quantum yields for BIHMPP is 0.29, Sm(III)-BIHMPP complex is 0.38, and Dy(III)-BIHMPP complex is 0.56. The ligand: metal binding stoichiometry observed is 2:1 (metal:BIHMPP) and maximum concentration that could be measured 1.2 nM and 0.7 nM for Sm(III) and Dy(III) ions respectively and with low detection limits. The cyclic voltammetric studies reveal the concomitant changes in electron transfer processes and support the complex formation.
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