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Synthesis of novel benzyldipicolylamine liked 1,8-naphthalimide derivatives as new fluorescent chemosensors

Water soluble fluorescent chemosensors are of interest for the metal ion detection in aqueous media such as industrial wastewater. This research involves the synthetic preparation of the series of 1,8-naphthalimide derivatives linked with *ortho, meta*, or *para* amino benzyldipicolylamine (N2D, N3D, and N4D). These target molecules of this research were designed to possess naphthalimide moiety as fluorophore and benzyldipicolylamine as a receptor and water soluble moiety. Firstly, benzyldipicolylamine can be easily obtained from the substitution of nitrobenzylbromide by dipicolylamine at room temperature. Then, the nitro group on benzyl ring was reduced by Pd/C under hydrogen gas in ethanol followed by the amidation with 1,8-naphthalic anhydride to gain the corresponding N2D, N3D, and in and N4D in 31%, 19%, and 30% yield, respectively. In order to add more binding site into the fluorescent sensor, 4-hydroxy-meta amine was used to produce another chemosensor 4HN3D, in 13% yield. According to the results of photophysical property investigation in milliQ water, these sensors exhibited the absorption maximum around at 345 nm. Also these compounds revealed the similar emission peak at around 400 nm. The sensing properties of target compounds will be investigated and the detailed results will be presented at the poster session.

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