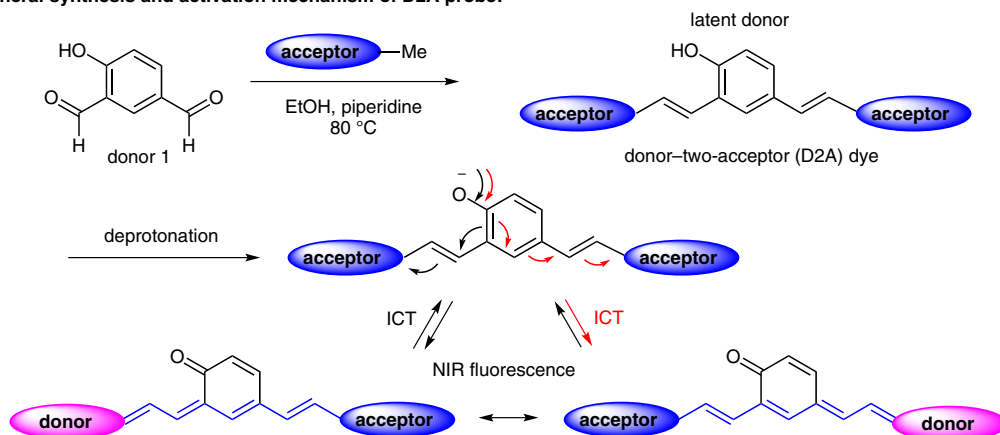


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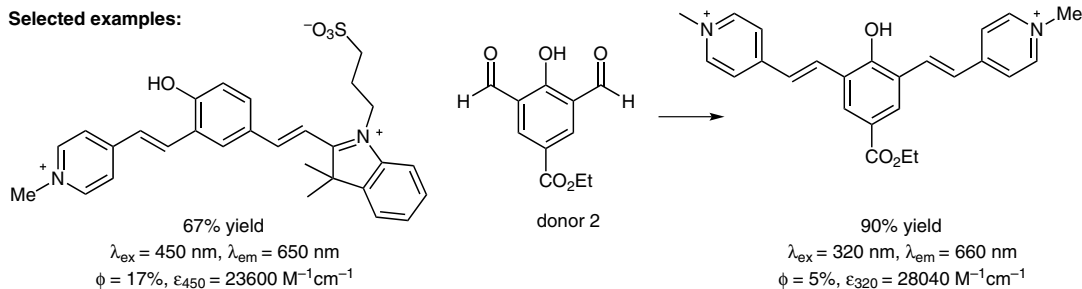
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 'Donor–Two-Acceptor' Dye Design: A Distinct Gateway to NIR Fluorescence  
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## New Donor–Acceptor NIR Fluorescence Dyes

General synthesis and activation mechanism of D2A probe:



Selected examples:



**Significance:** A cyanine-like dye, which consists of a phenol moiety as a latent donor in conjugation with two acceptors, was synthesized. The unique design of this D2A dye enables an internal charge transfer (ICT) from a phenolate active donor to one of two acceptors, which leads to a longer  $\pi$ -electron system and near-infrared (NIR) fluorescence. Masking of the phenolate donor by various protecting groups provides a convenient route to a turn-ON fluorescence probe by releasing the active dye through an ICT mechanism.

**Comment:** A new fluorophore scaffold with D2A  $\pi$ -electron system provides a large Stokes shift and NIR fluorescence, which is desirable for in vivo imaging applications.

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Category

Synthesis of  
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dyes

fluorescence

NIR emission