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One-Pot Formation of Aminoquinones by Direct Irradiation of Quinones in Anilines

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Extensive studies demonstrated that anilines take part in a lot of photochemical reactions in different modes. Recently, we found that irradiation of anthraquinone in *N,N*-dimethylaniline gives an ethanolamine as the major product. To compare the photochemical reactivities of quinones, we selected some benzoquinones such as 1,4-benzoquinone, 1,4-naphthoquinone, 1,2-naphthoquinone, 2,5-dihalo-1,4-benzoquinone and 2-chloro-1,4-benzoquinone to irradiate in anilines with 300nm UV light. 1,4-Benzoquinone dissolved in *N,N*-dimethylaniline was irradiated for 24 h to give a red-colored aminoquinone as 1:1 dimer. 1,4-Benzoquinone dissolved in *N*-methylaniline was irradiated for 24 h to give a red-colored aminoquinone as 1:2 photoadduct. Irradiation of 1,4-naphthoquinone, 1,2-naphthoquinone, 2,5-dihalo-1,4-benzoquinone and 2-chloro-1,4-benzoquinone in anilines gave the same type of aminoquinones, although no products were found from the photoreactions of benzoquinones in aniline, *N,N*-diethylaniline and *N*-ethyl-*N*-methylanilin. Different types of photoproducts were found, when 2-chloro-1,4-benzoquinone and 2,5-dichloro-1,4-benzoquinone were irradiated in *N,N*-dimethylaniline.

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