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Synthesis and photophysical properties of functionalized purine derivatives

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Recently, we developed the synthesis of fluorescent triazolylpurine derivatives.^{1,2} Here we report the synthesis of purine-azole conjugates containing 1,2,3-triazole, imidazole, 1,2,4-triazole, tetrazole and carbazole moieties at purine C(2) and C(6) positions (Figure 1). We functionalized N(9) position with trityl moieties, which enhanced amorphous properties³ or with carbazole moieties, which increased hole transfer capabilities. Photophysical properties of the fluorescent purines were studied in the solution and in the film. Quantum yields in DCM solution reached up to 91% and up to 58% in the films.

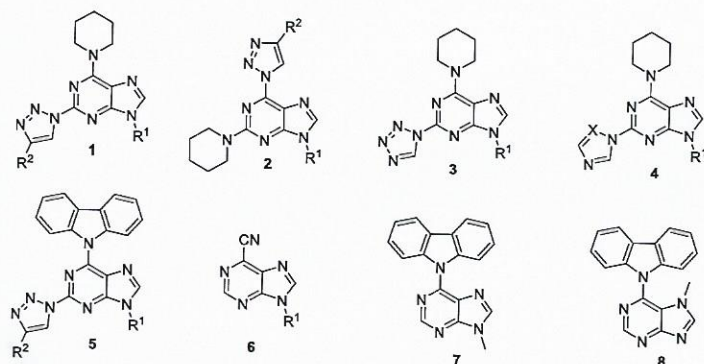


Figure 1. Fluorescent purine derivatives with various azole moieties.

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