

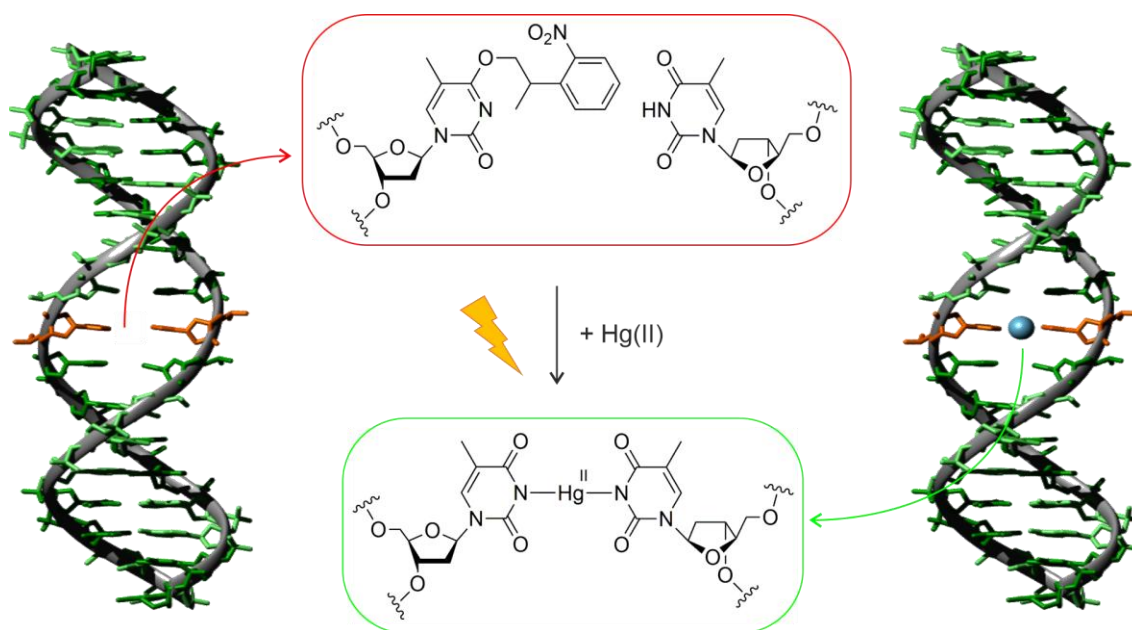
## Light-Induced Formation of Metal-Mediated Base Pairs

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Metal-mediated base pairs may be considered conjugates of nucleic acids and metal complexes.<sup>1</sup> They are formed by formally replacing hydrogen bonds within a base pair by coordinate bonds. As a result, metal ions are introduced into the nucleic acid duplex along its helical axis. The ability to decorate nucleic acids site-specifically with transition metal ions allows interesting applications in nucleic acid nanotechnology, in sensors, and in responsive nucleic acid systems.<sup>2</sup>

We recently introduced caged nucleosides into metal-mediated base pairing.<sup>3</sup> They allow the triggering of metal-mediated base pair formation by light (see Figure), thereby expanding the ability to create responsive nucleic acid systems. Selected examples of light-induced metal-mediated base pair formation will be presented.



Schematic representation of the light-triggered formation of a Hg(II)-mediated base pair.<sup>3a</sup>

<sup>1</sup> Y. Takezawa, J. Müller, M. Shionoya, *Chem. Lett.* **2017**, 46, 622-633.

<sup>2</sup> S. Naskar, R. Guha, J. Müller, *Angew. Chem. Int. Ed.* **2020**, 59, 1397-1406.

<sup>3</sup> a) S. Naskar, J. Müller, *Chem. Eur. J.* **2019**, 25, 16214-16218; b) S. Naskar, M. Hebenbrock, J. Müller, *Inorg. Chim. Acta* **2020**, 512, 119856; c) S. Naskar, J. Müller, *Inorg. Chem.* **2021**, 60, 14765-14771.