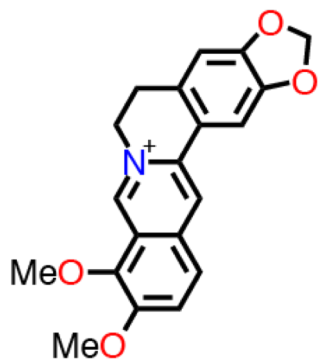
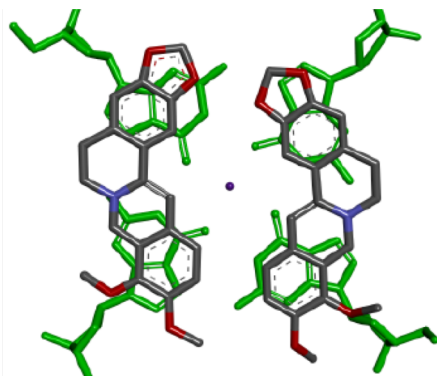


Fluorogenic G-quadruplex Ligand based on conformational switching

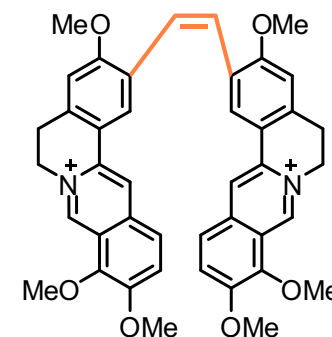


Berberine (BBR)
Plant second metabolite

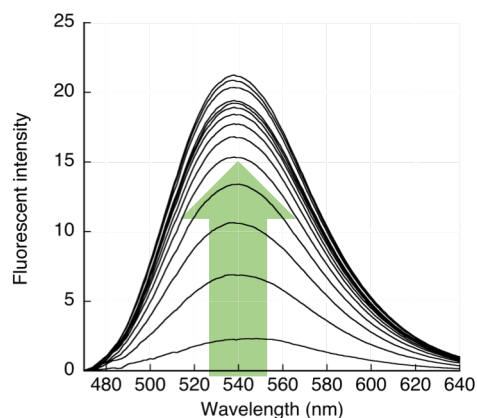


Cocrystal structure of
BBR and G-quadruplex

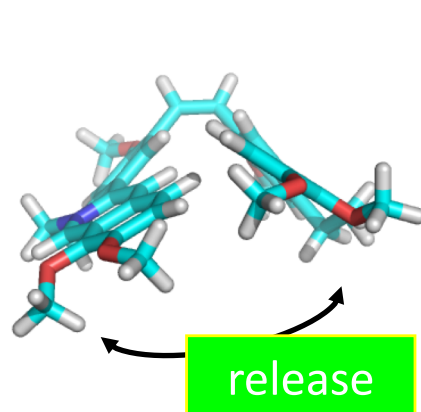
1. Design of the dimer
2. Conformational control



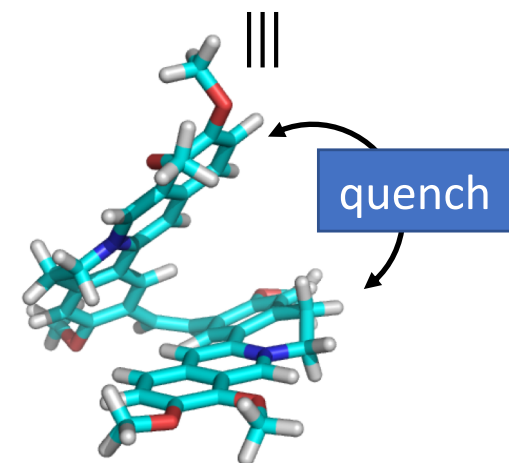
Synthesis of BBR dimer
The linker can control its conformation



Canceling of self-quenching due to their binding. (Turn-on)



Bind to G4

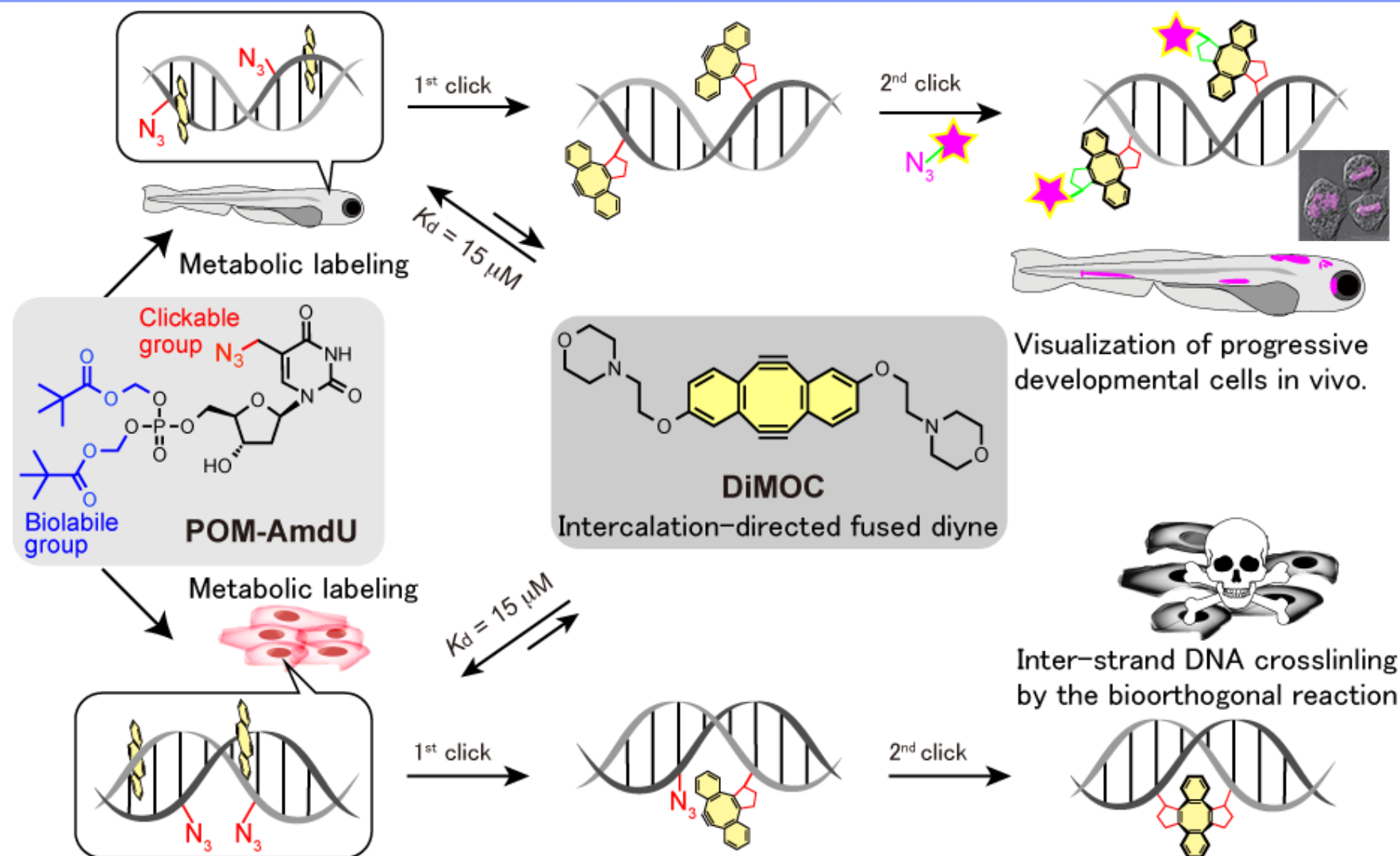


Self-quenching
(Turn-off)

- Tera^{*}, *et al.*, **Chem. Eur. J.**, 21, 14519-14528, (2015).
- Tera, *Journal of Nucleic Acids Chemistry*, 1, 20-24 (2017).
- Tera, ISNAC 2015, Outstanding Oral Presentation Award. (2015).

BBR dimer was developed inspired by cocrystal structure of BBR and G4.
Fluorogenicity of BBR-dimer was controlled by its conformational switch.

Metabolic labeling of DNA and click reaction with cyclooctadiyne



- [Tera](#), Grassuer, Luedtke, *ChemBioChem*, 19, 1939-1943, (2018).
- [Tera](#), Harati-Taji, Luedtke, *Angew. Chem. Int. Ed.*, 57, 15405-15409, (2018).
- [Tera](#), Luedtke, Harati-Taji, Alzeer, McEion, EP18180250.5, (27 June, 2018)

Introducing azide groups into cells and organs (zebrafishes, mice).
Development of intercalation-enhanced click cross-linker.