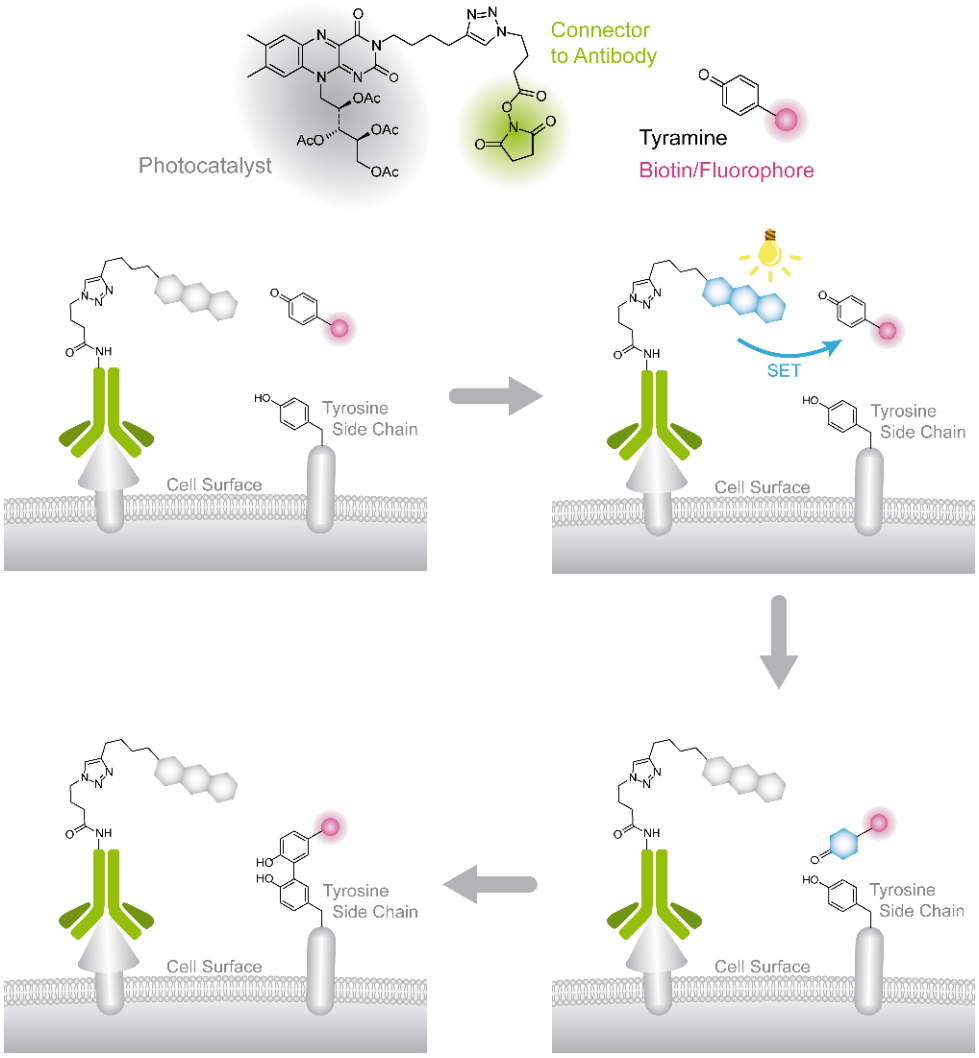
RFT-photocatalyst for investigation of cell-cell interactions



Photocatalytic cell tagging is a method to investigate cell-cell interactions by conjugating photoactivatable flavin-based cofactors to single-domain antibodies, which upon irradiation with visible light generate phenoxy radical tags for targeted proximity labeling.

How does it work?

Targeted photocatalytic cell tagging is achieved by using a primary/secondary antibody system specific to the target of interest. The photocatalyst is equipped with a connector that enables non-site selective binding to the secondary antibody. After incubating the photocatalyst with the secondary antibody, excess, unbound photocatalyst can be removed by spin column purification. The system of interest is first incubated with the primary antibody and then with the modified secondary antibody together with a tyramine label. Upon irradiation with visible light (455 nm), the photocatalyst transfers an electron to the tyramine creating a phenoxy radical. The phenoxy radical then reacts with tyrosine side chains on this cell and interacting cells in proximity. Labeled cells can then be characterized via flow cytometry, microscopy, or pull-down methods.

How can it work for you?

Step 1. Come to us with a known primary/secondary antibody system specific to your cell of choice. We will then synthesize the photocatalyst for you.
Optional: If you want to use a custom-made tyramine that is not commercially available we can also synthesize that for you.
Step 2. Attach the photocatalyst to your secondary antibody of choice and purify it using a spin column.
Step 3. Use the system to investigate your cell-cell interaction of choice.