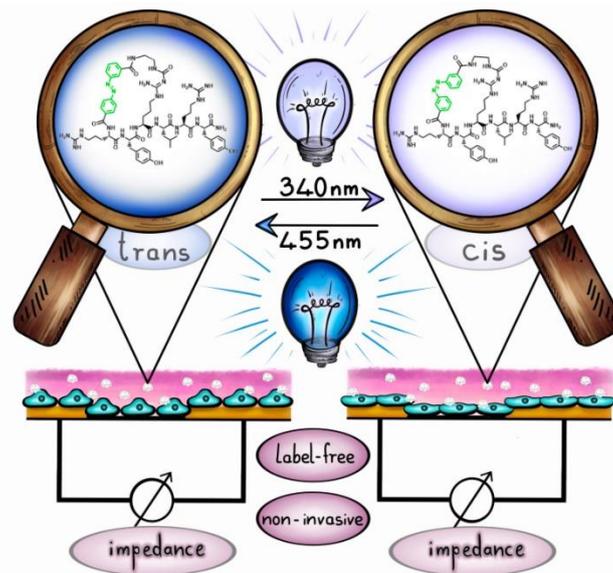


Impedimetric analysis of photoswitchable agonists targeting the NPY Y₄ receptor

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G protein-coupled cell surface receptors (GPCR) are activated upon agonist binding by complex mechanisms. Classic pharmacological assays provide information about binding affinities, activation or blockade at different stages of the signaling cascade, but real time dynamics and reversibility of processes remain often disguised. We show that combining photochromic NPY receptor ligands, which can be toggled in their receptor activation ability by irradiation with light of different wavelengths, with whole cell label-free impedance assays allows the observation of activation profiles over time and the reversibility of activation. The concept demonstrated on NPY receptors may be well applicable for many other GPCR activations to provide a deeper insight into the time course of molecular activation processes.