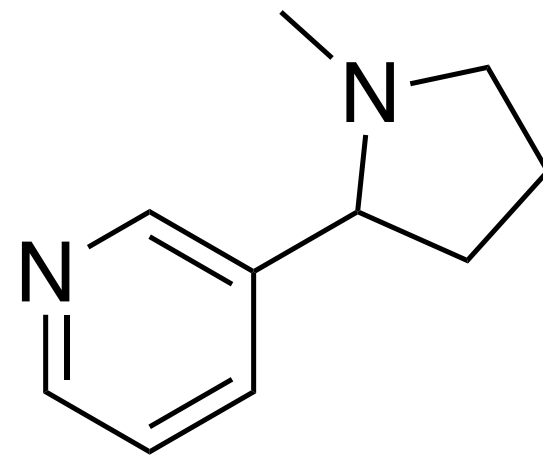
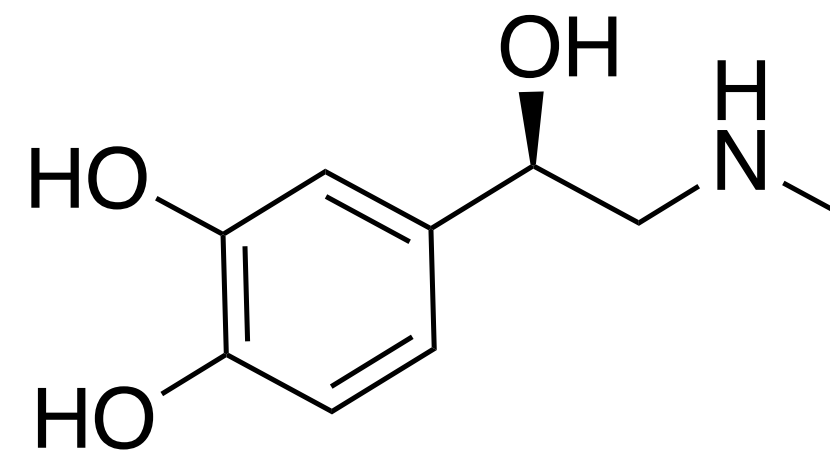


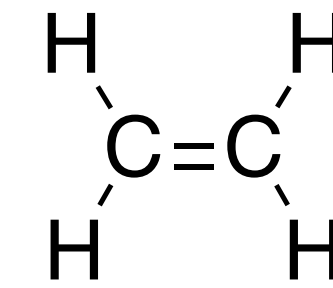
Screening approaches in drug discovery



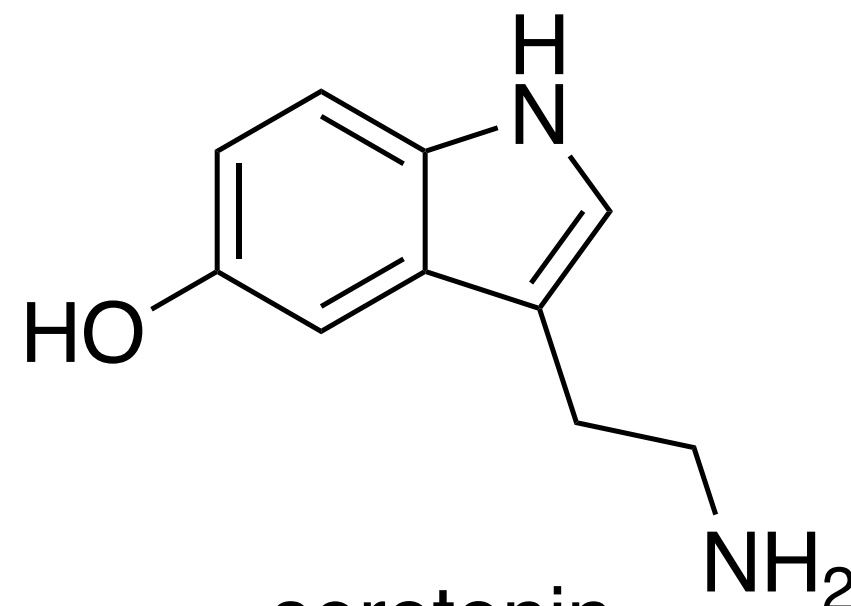
nicotine



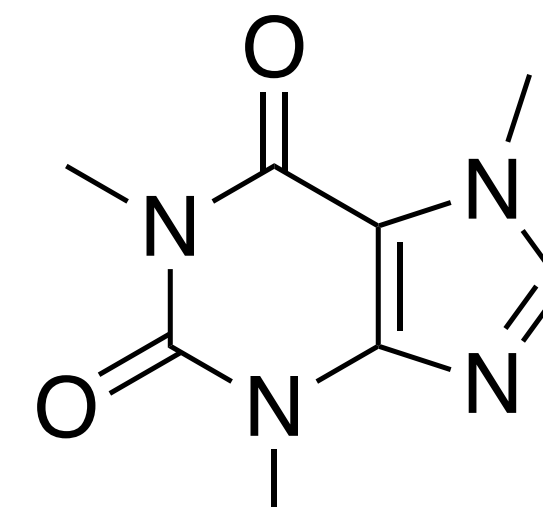
adrenaline



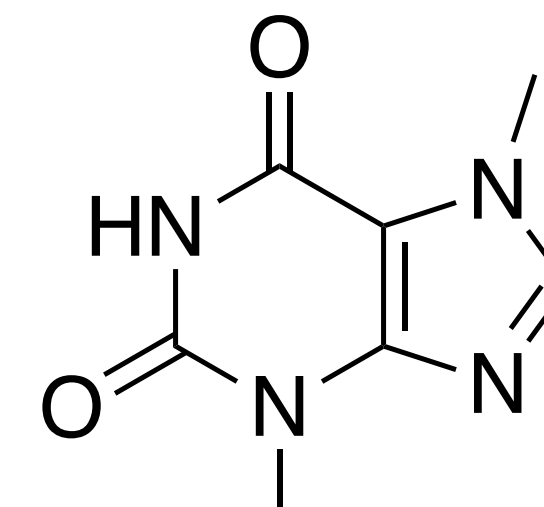
ethylene



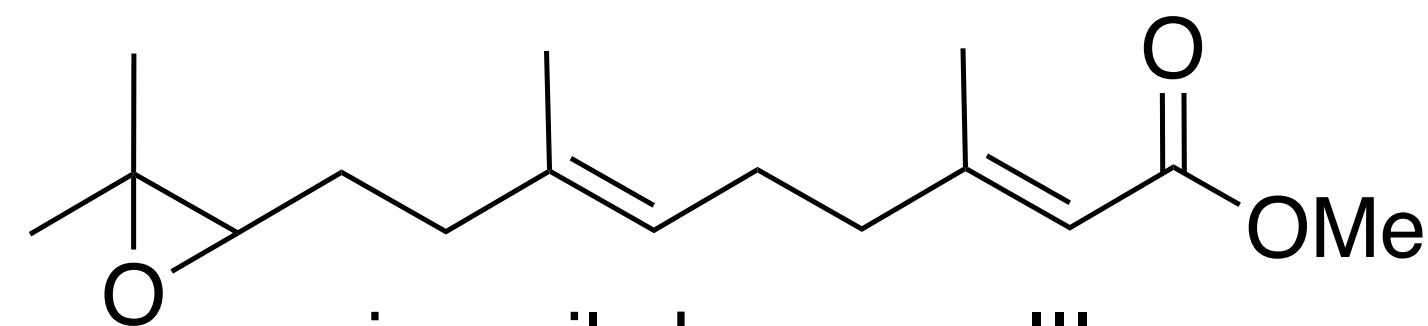
serotonin



caffeine

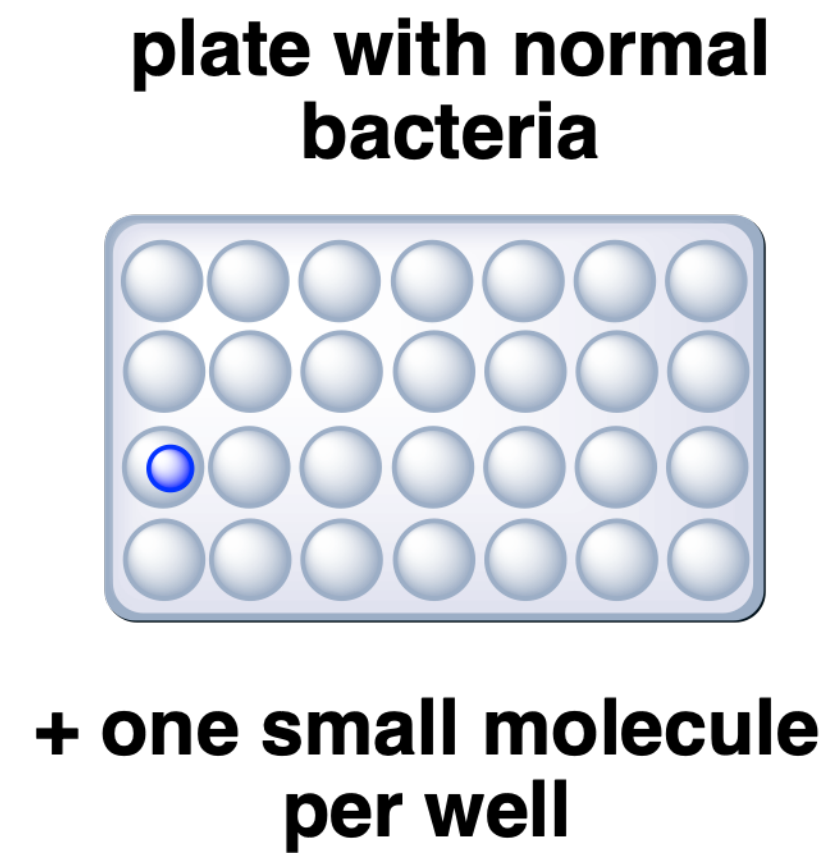
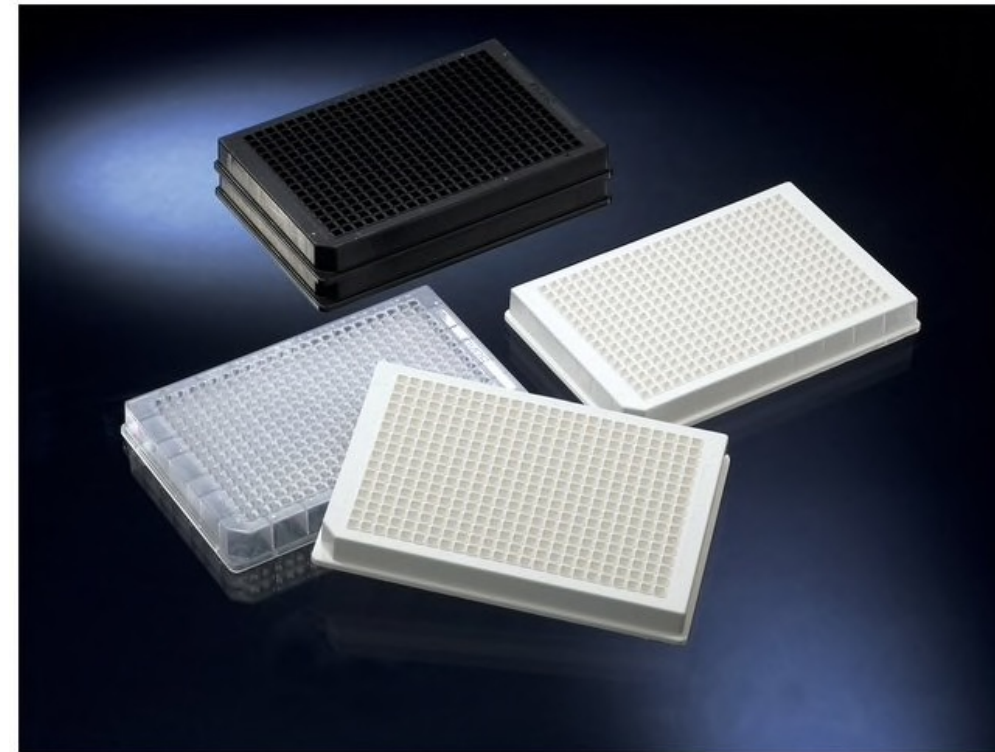


theobromine



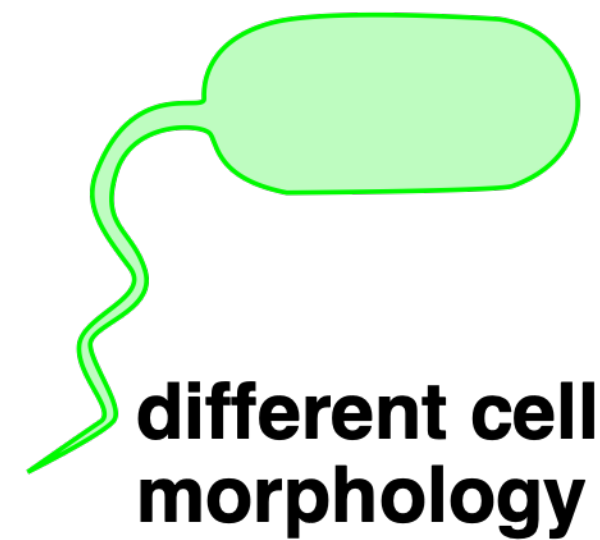
juvenile hormone III

Phenotype to drug target

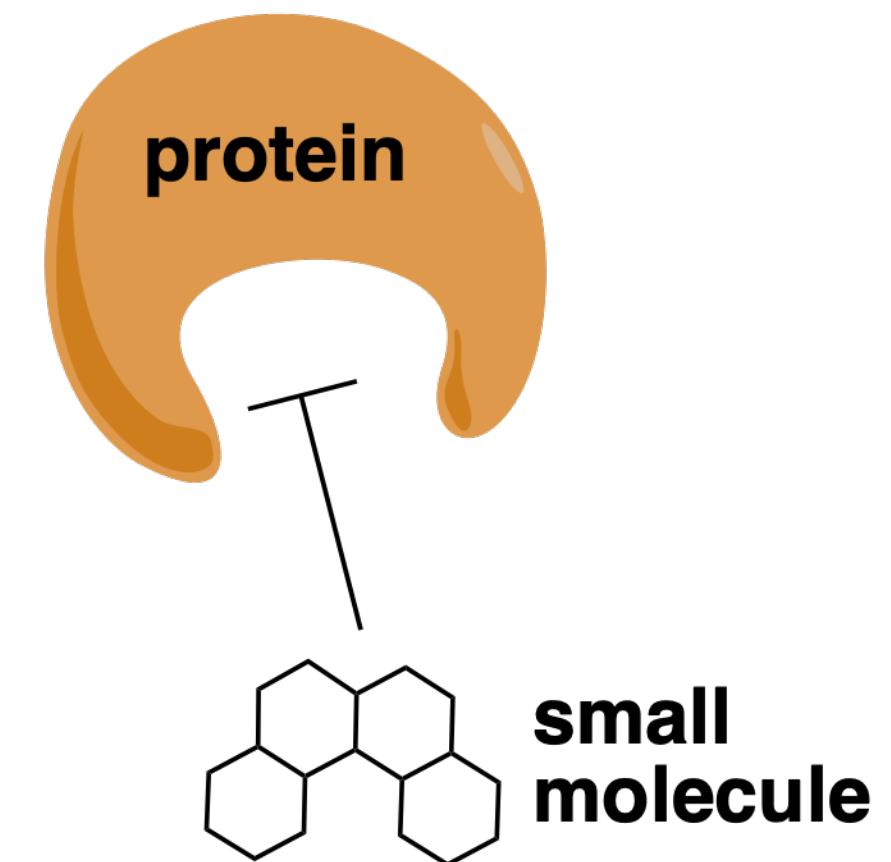


1) screen small molecules

2) select phenotype

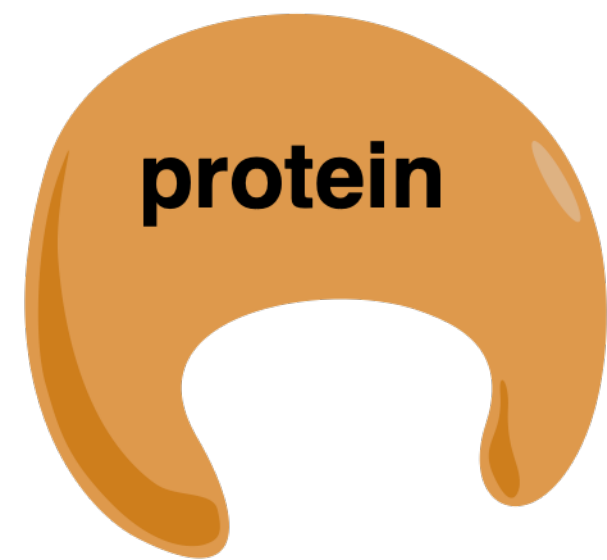


identify **protein** causing the phenotype

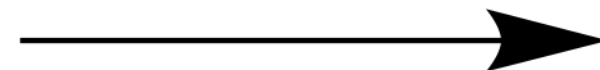


Drug target to phenotype

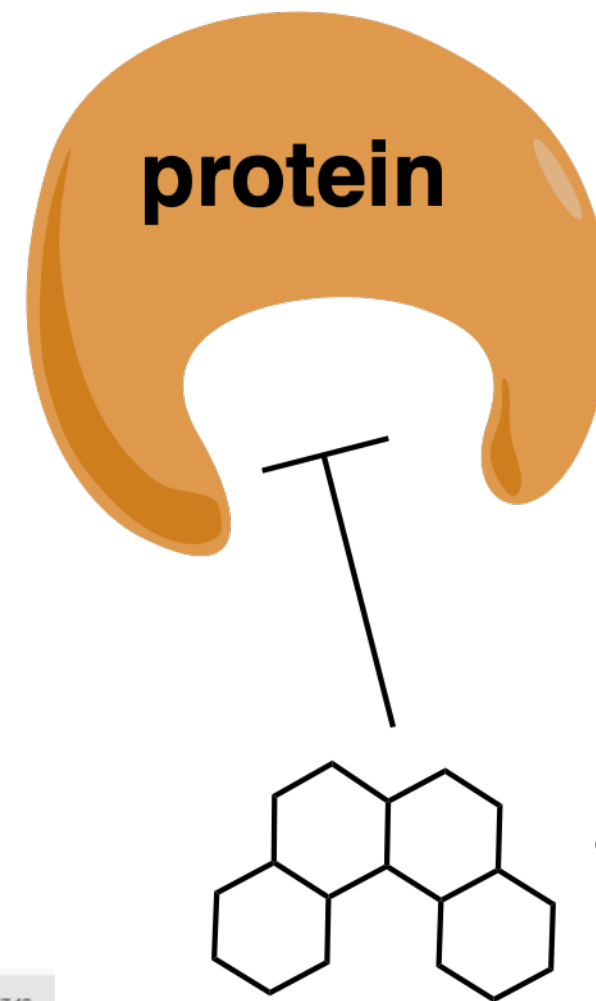
normal bacterial
protein



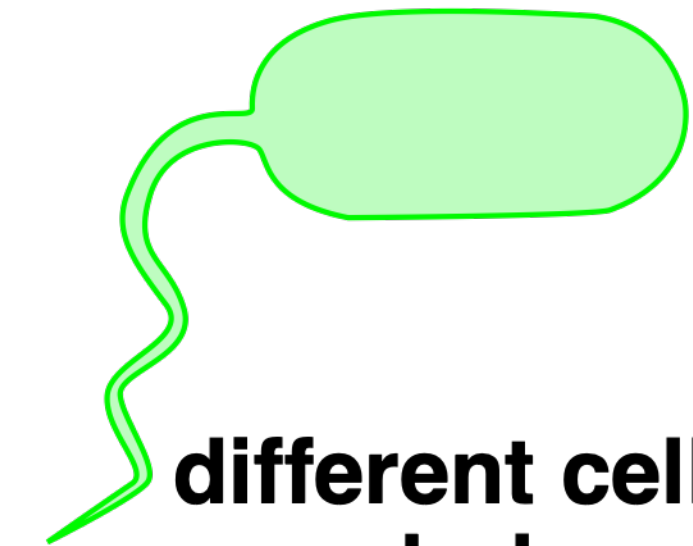
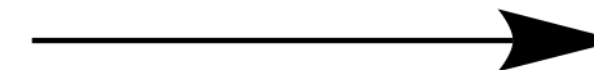
1) discover small
molecule partner



protein



observe phenotype



different cell
morphology

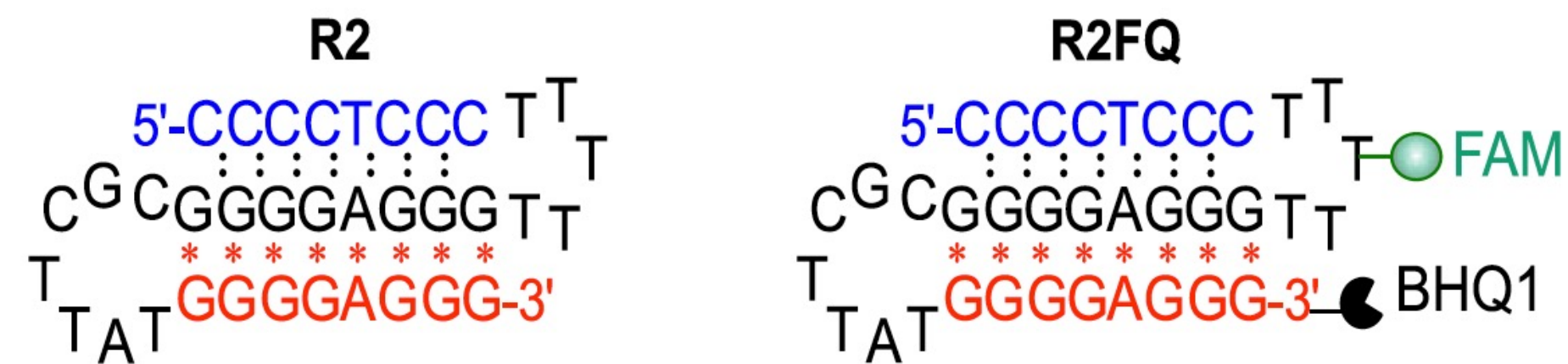


1536 – well plate

An example of an in vitro screen

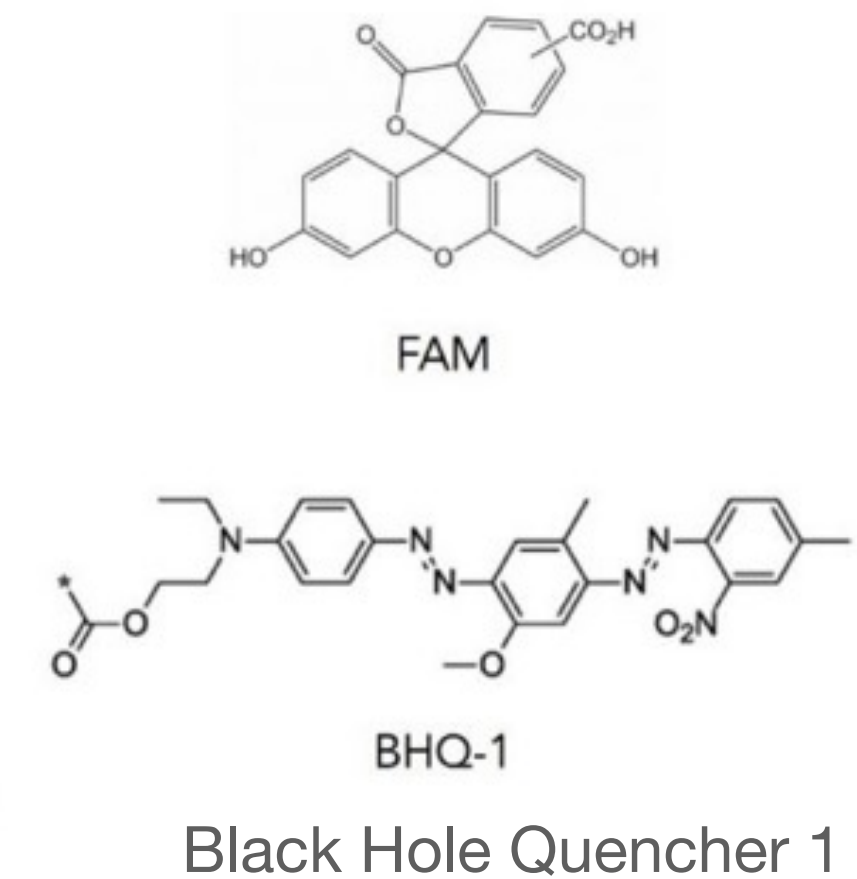
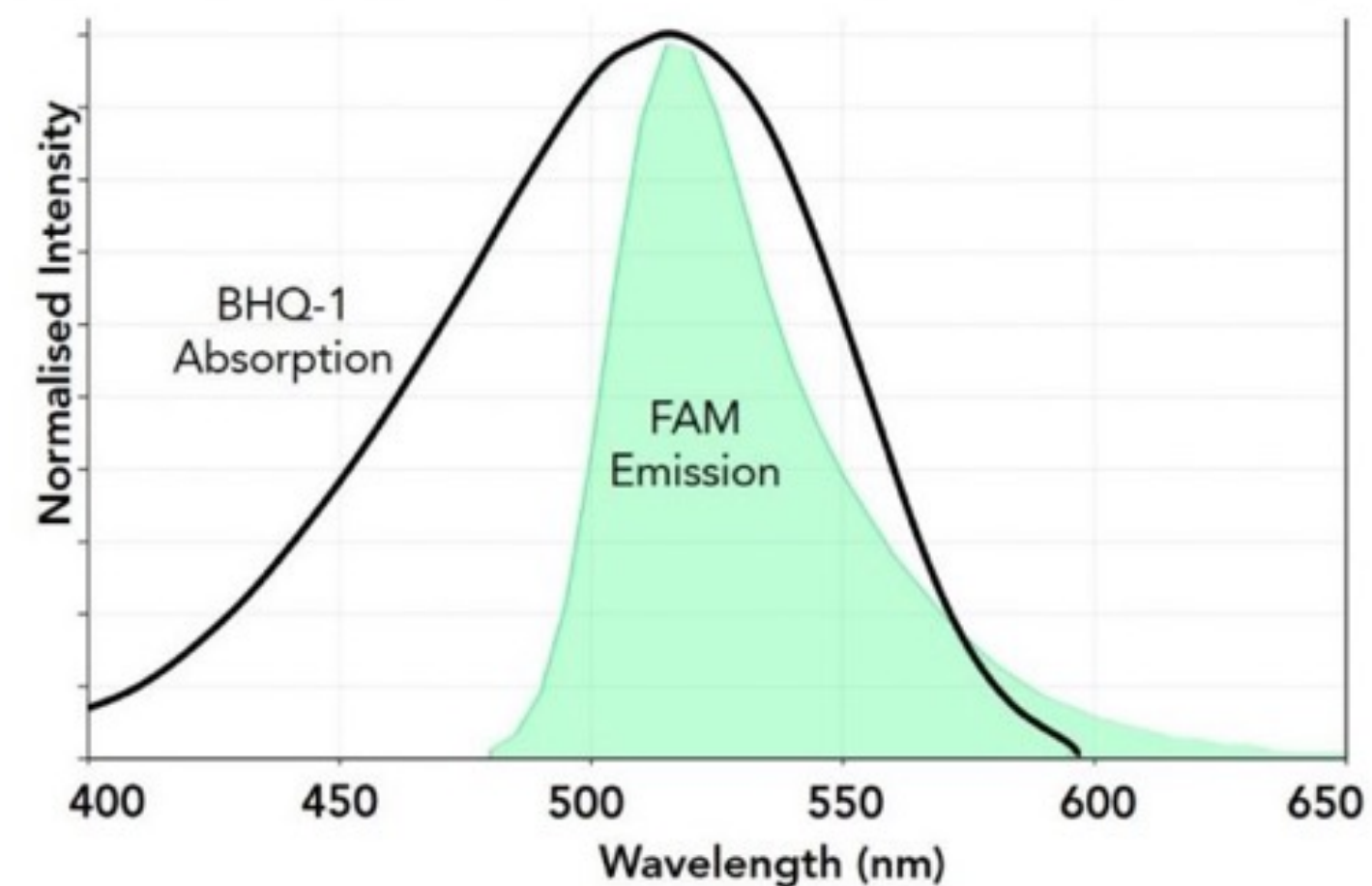
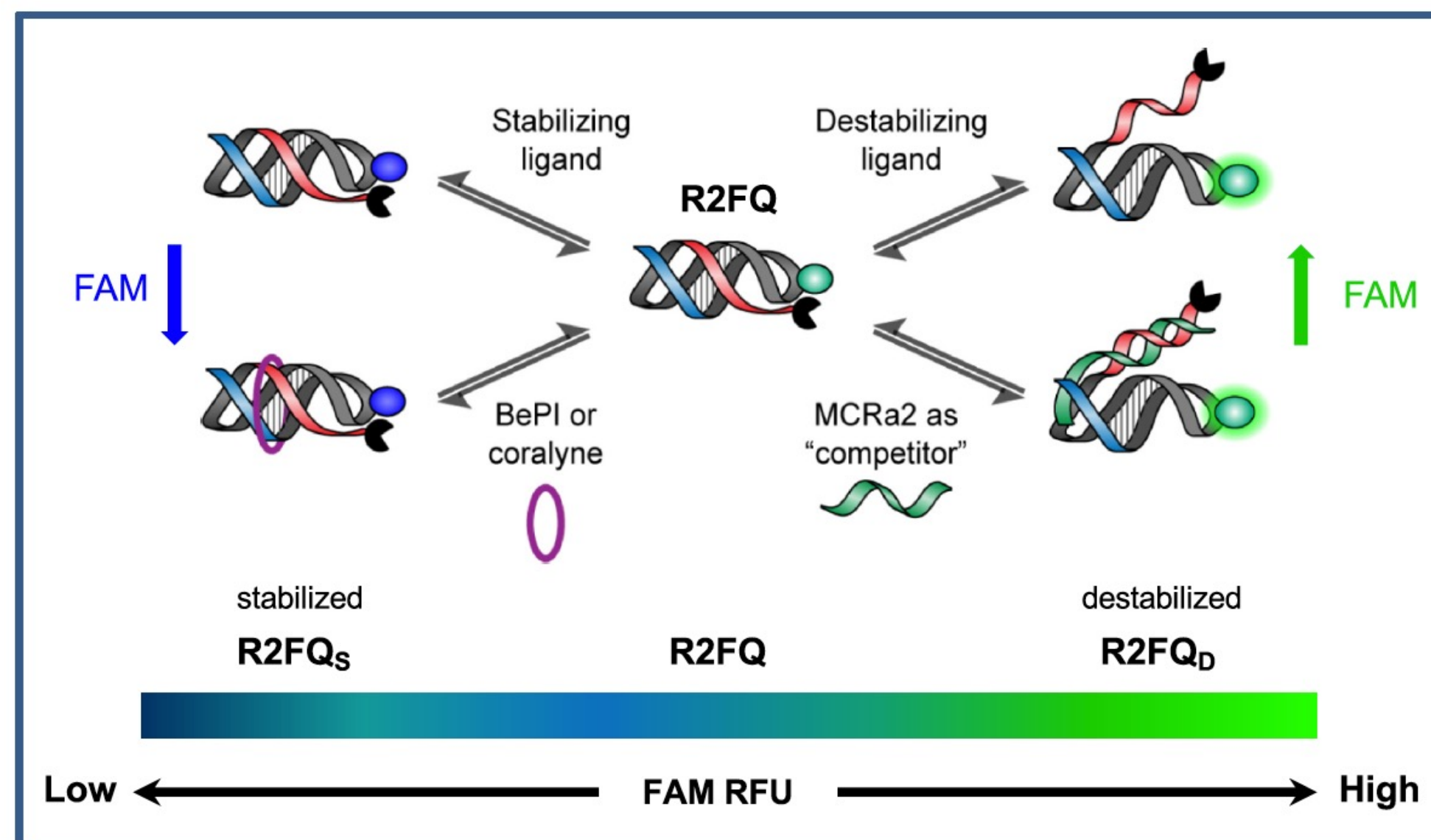
In vitro assays - Fluorescence resonance energy transfer (FRET)

A H-DNA/intramolecular triplex structure



Excitation 495 nm
Emission 520 nm

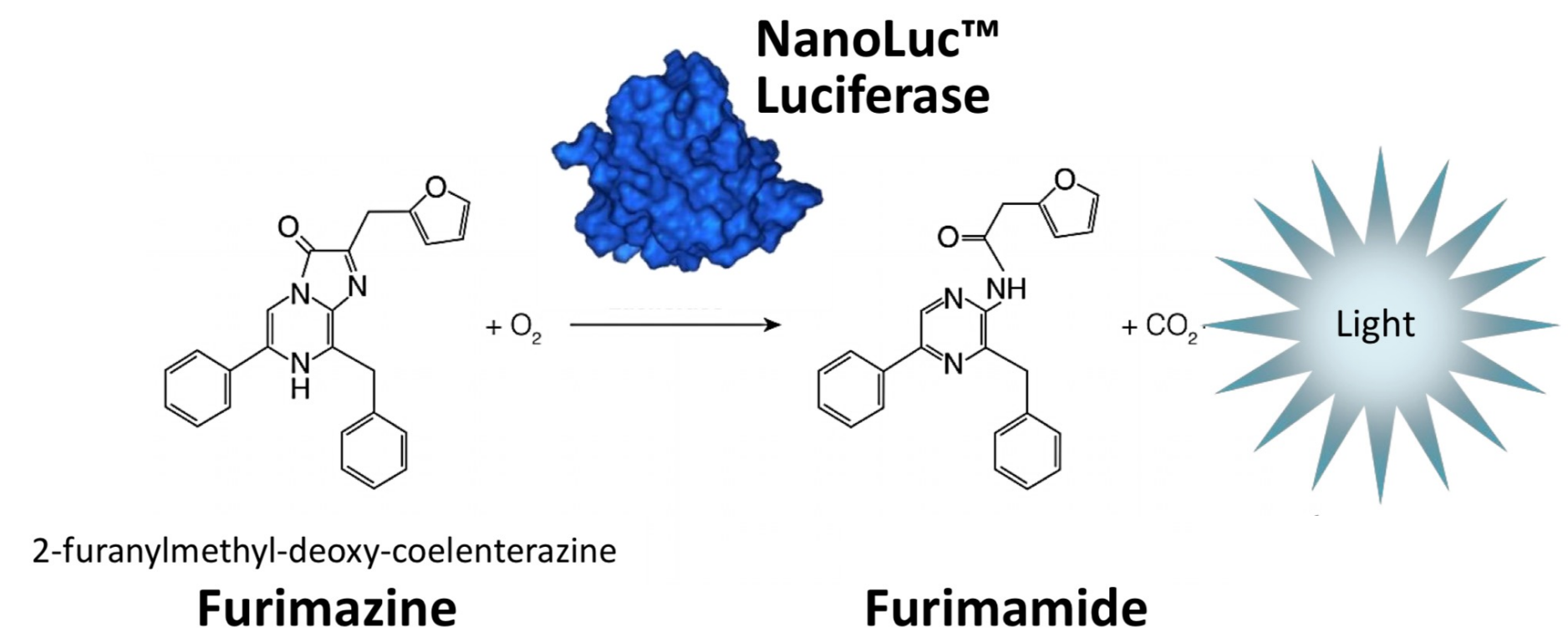
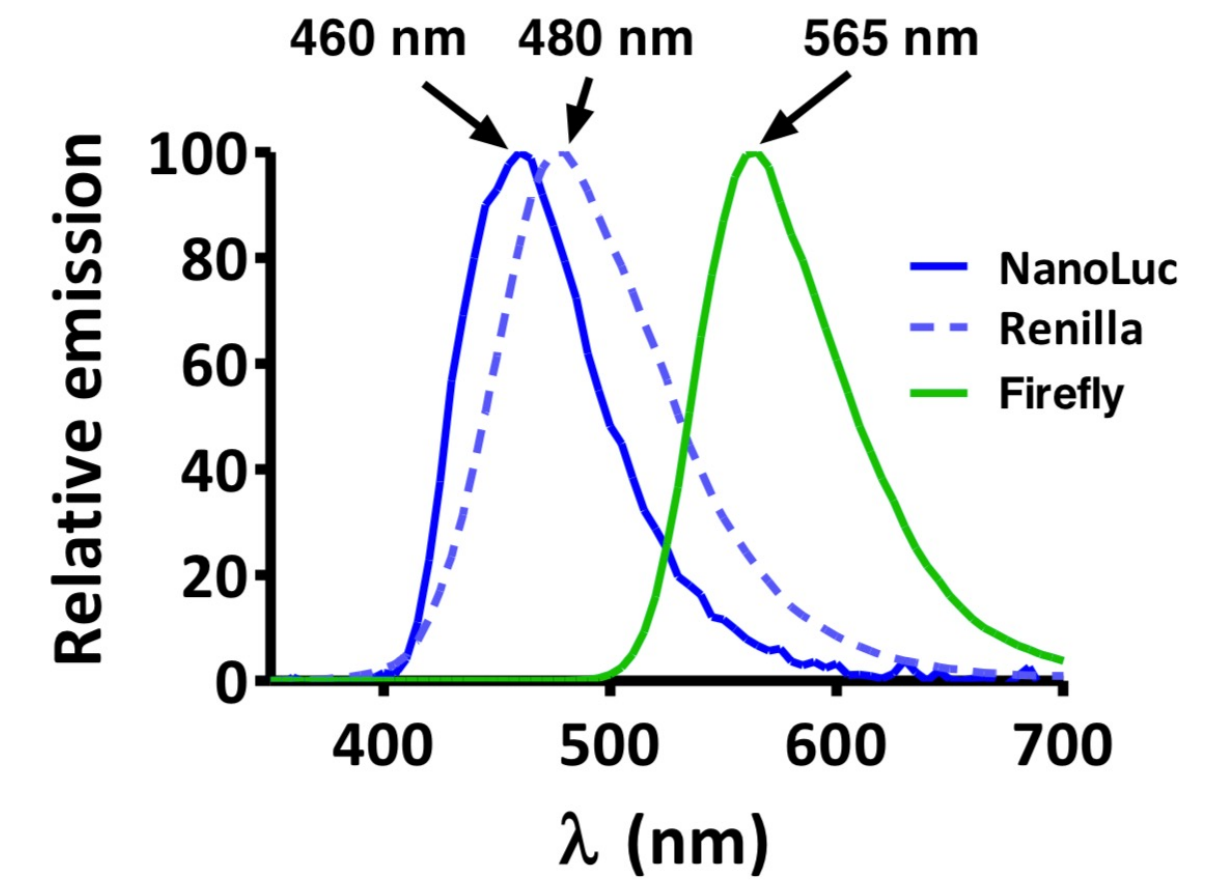
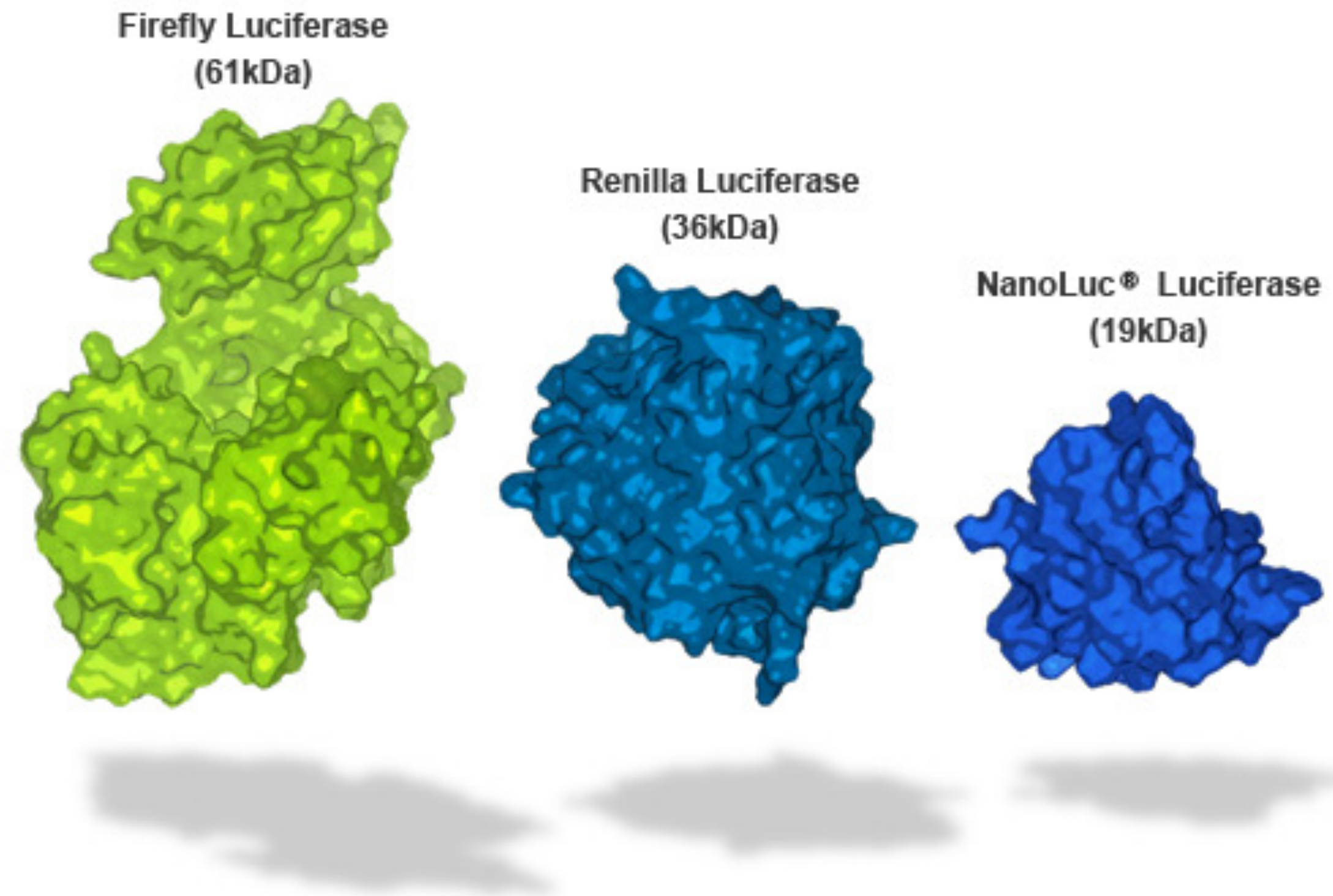
B FRET-based assay principle



A tunable assay for modulators of genome-destabilizing DNA structures

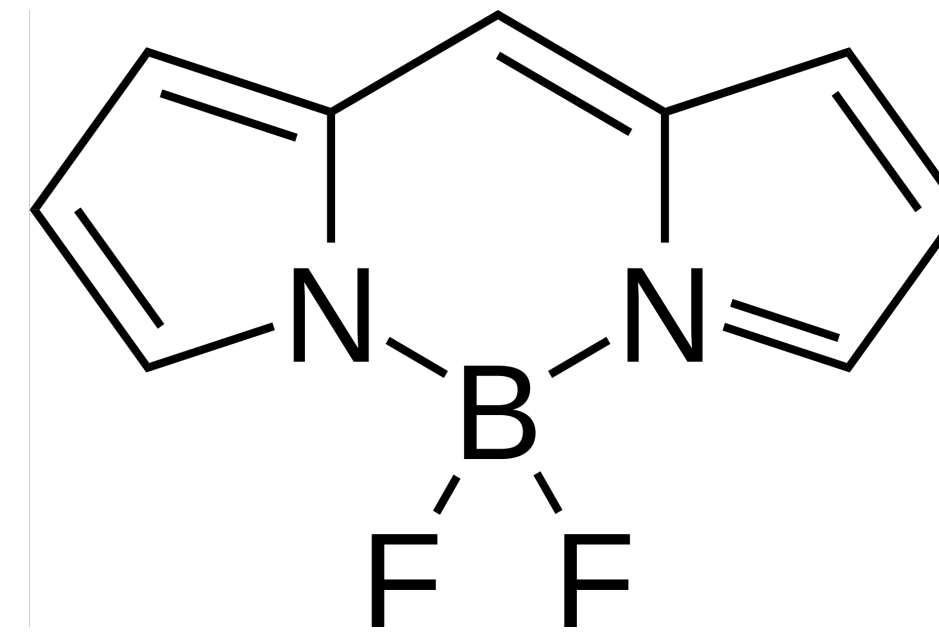
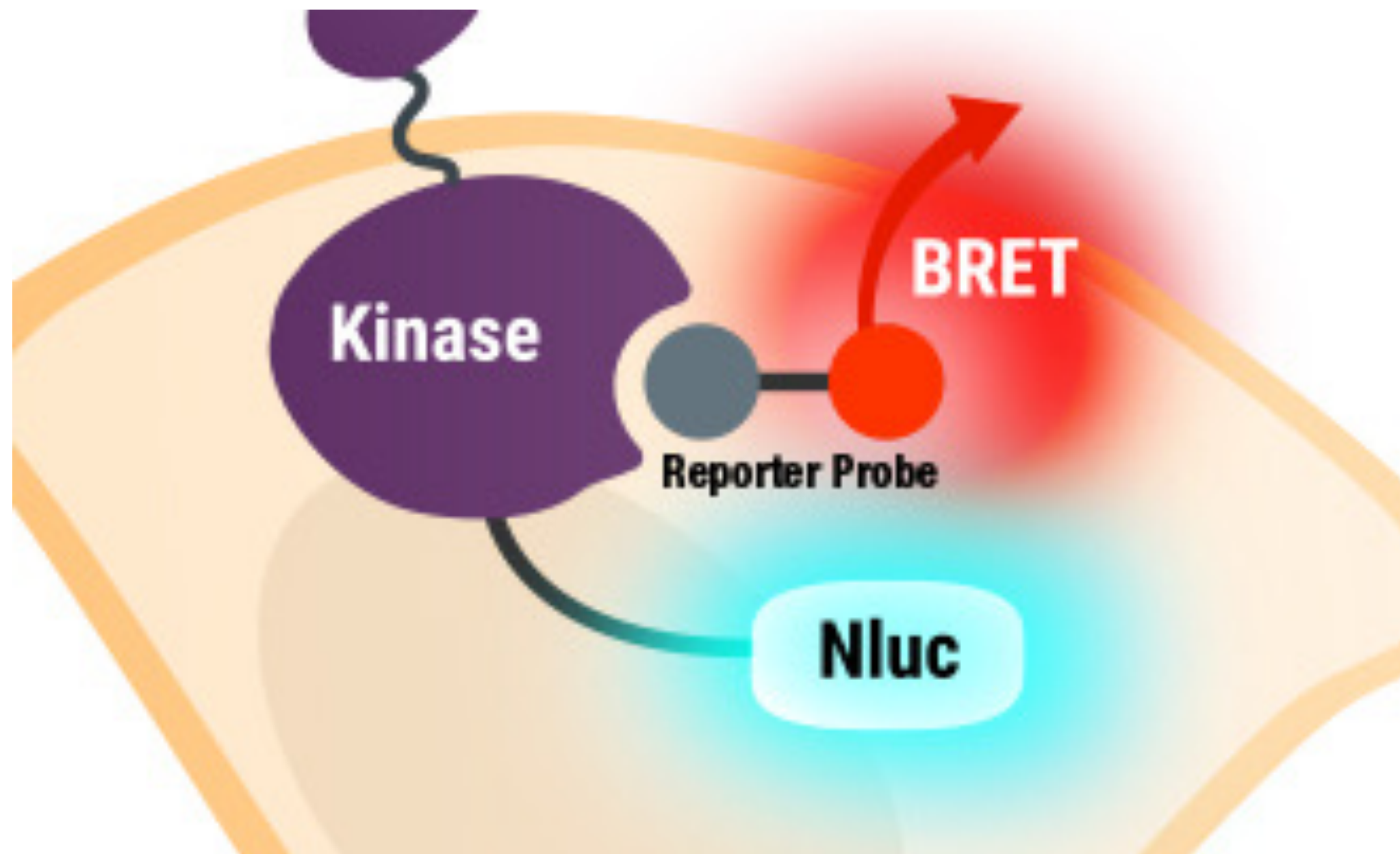
Imee M.A. del Mundo^{1,†}, Eun Jeong Cho^{2,†}, Kevin N. Dalby^{2,‡} and Karen M. Vasquez^{1,*,‡}

Introduction to luciferase



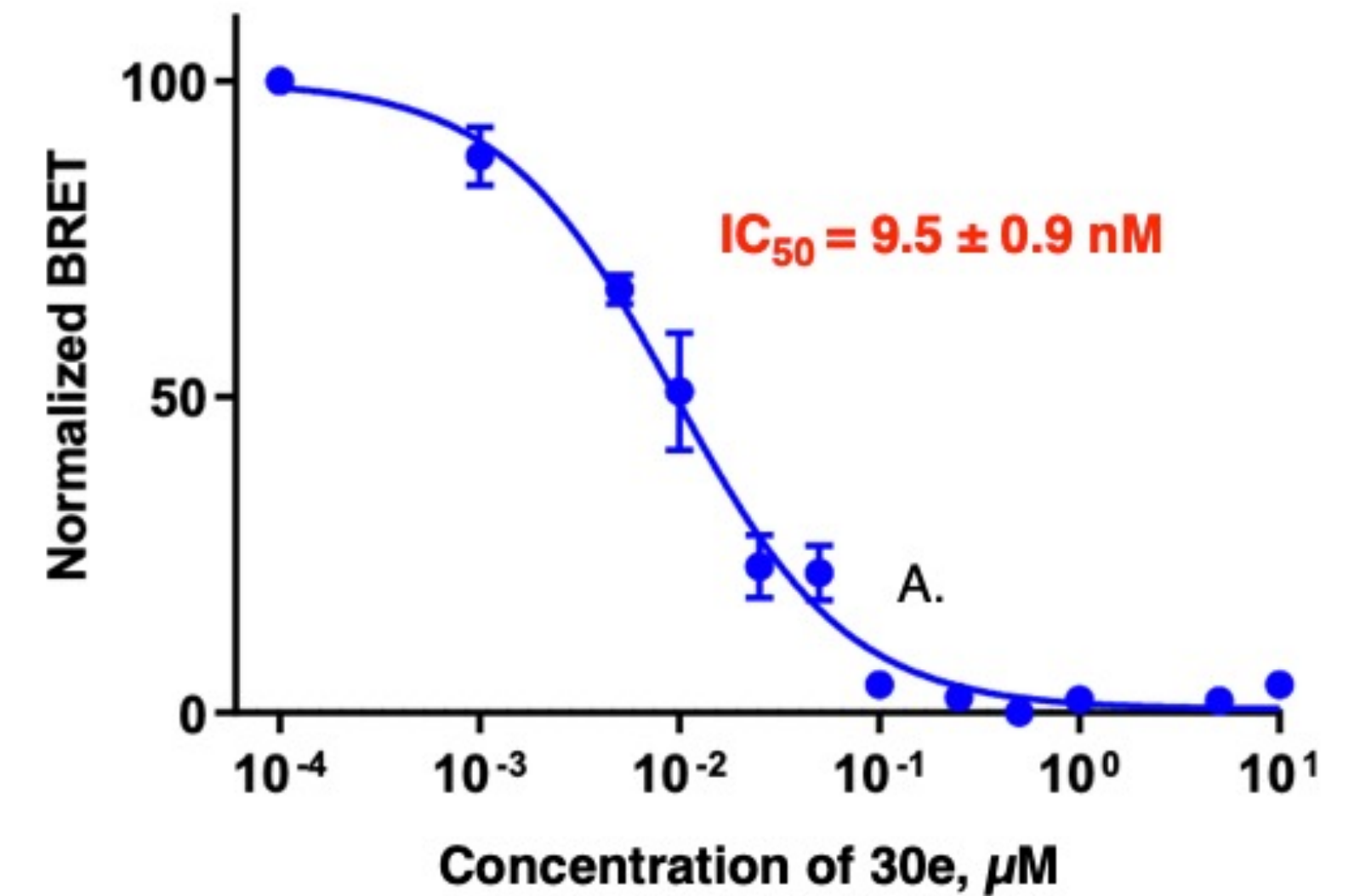
Quantifying interactions in live cells

Bioluminescence Resonance Energy Transfer (BRET)



BODIPY dyes

Excitation ~480 nm
Emission 500-530 nm



Screening events in live cells

Real-time live cell time lapse

- IncuCyte Zoom system
 - utilizes a tissue culture incubator
 - 4x, 10x, 20x microscope objective
 - simultaneously monitoring two colors (green/red)

