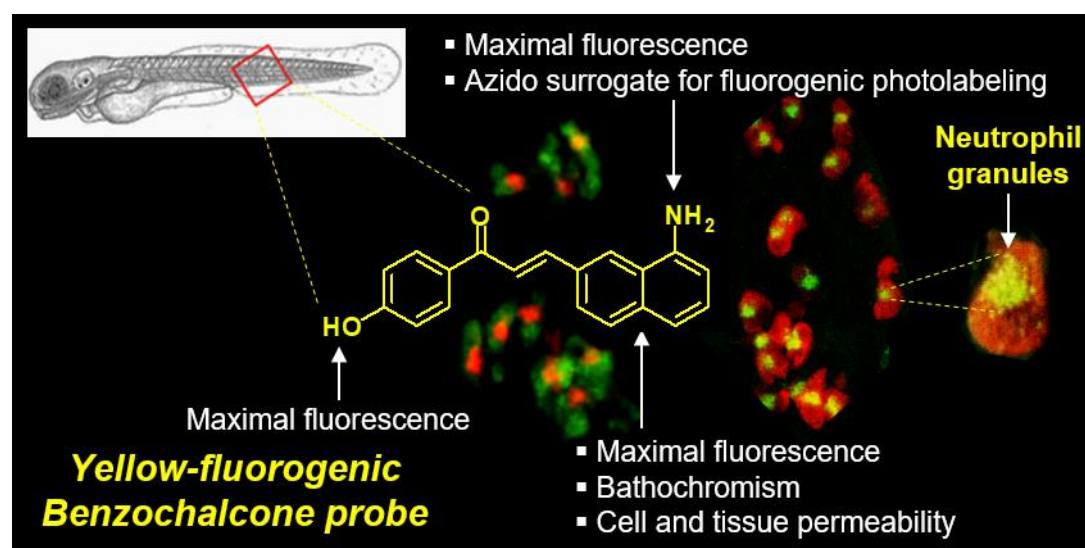


## HAB, a novel small-molecule fluorogenic probe highlighting the dynamics of neutrophil granules *in vivo*

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Neutrophils are key cells of immunity, destroying microbes thanks to the microbicidal molecules contained in their granules. No fluorescent vital stain existed up to now to specifically monitor granule dynamics within a whole live organism. We rationally designed a benzochalcone fluorogenic probe (HAB) featuring high tissue permeability and optimal photophysics (elevated quantum yield, pronounced solvatochromism and target-induced fluorogenesis). We demonstrate that HAB is the first cell- and organelle-specific small-molecule tracer of neutrophil granules in live zebrafish larvae, with no labeling of any other cell types or organelles, highlighting their behaviour in resting and phagocytosing neutrophils. HAB also intensely labels isolated live human neutrophils, suggesting its applicability to mammalian systems. HAB therefore holds great promise for the study of neutrophil-dependent responses relevant to human physiopathology such as developmental defects, inflammation and infection (Colucci-Guyon et al, *Chem Science* 2019).



HAB, a fluorogenic benzochalcone probe, specifically labels live neutrophil granules in whole wild-type, GFP- or RFP-expressing zebrafish embryos and larvae (Colucci-Guyon et al, *Chem Science*, 2019).