

(Summary)

Yoshimulactone Green (YLG) was developed as a reagent for the research of *Striga*, a parasitic plant that causes huge damages to crops in Africa. The probe acts by showing fluorescence upon binding to a strigolactone receptor, which is present in *Striga*, and has become commercially available from TCI Chemicals in January 2016.

(Note)

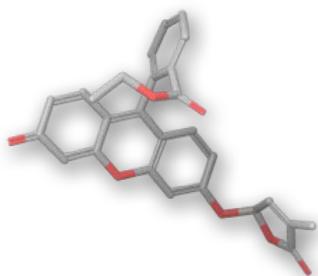


Figure: Molecular structure of Yoshimulactone (YLG)

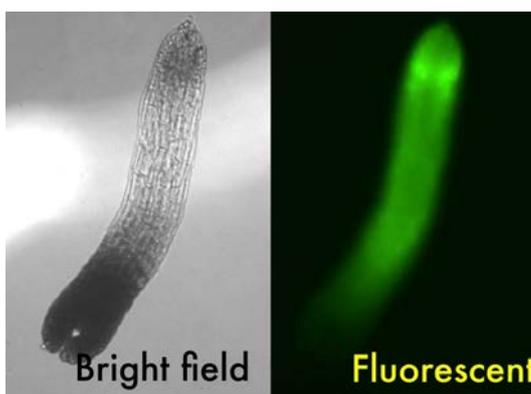


Image: Bioimaging of *Striga* germination induced by Yoshimulactone (YLG)

(Summary)

Cross-coupling reactions are an important synthetic method in organic synthesis, and are used in various industrial processes. ITbM has developed a nickel catalyst (Ni-dcype), which couples heteroaromatic compounds with phenol derivatives, aromatic esters, enol derivatives and unsaturated esters, producing cross-coupled products in high yield. This catalyst has been commercialized from Kanto Chemical.

(Note)

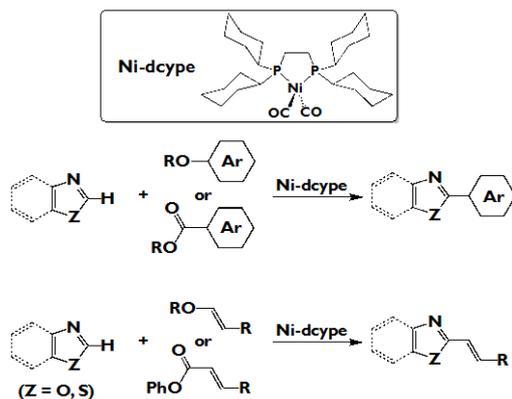


Figure: Structure of nickel catalyst (Ni-dcype) and examples of its application

(Summary)

ITbM has developed LipiDye, a novel fluorescent dye for live cell imaging, which can stain lipid droplets with high sensitivity. Funakoshi has commercialized this dye in July 2016. Although Nile Red has conventionally been used as a dye for detecting lipid droplets, LipiDye shows high efficiency relative to Nile Red. LipiDye is a fluorescent dye that shows luminescence depending on the polarity of the solvent. The dye is selectively incorporated by lipid droplets and emits green fluorescence inside neutral lipids. LipiDye does not show fluorescence in aqueous media, which means that it can suppress the non-selective emission from the cytoplasm, thus showing a higher signal to noise (S/N) ratio compared to conventional dyes. This dye also exhibits high photostability and low cytotoxicity, and can be used in both live and fixed cells, making it ideal for live imaging.

(Note)

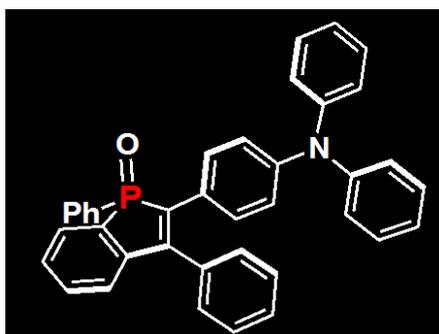


Figure: Molecular structure of LipiDye

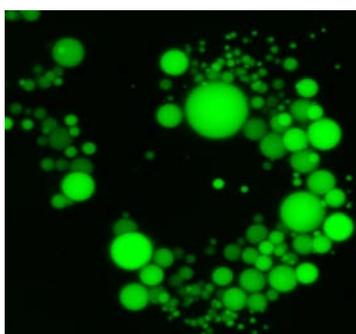


Image: Fluorescence of LipiDye incorporated by lipid droplets.