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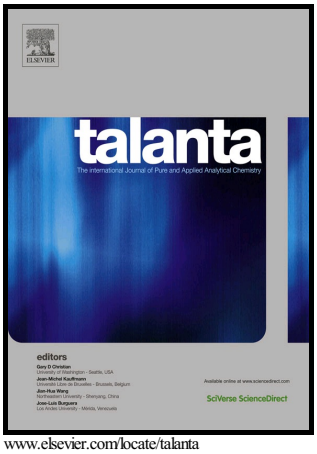

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Novel fluorescent probe for rapid and ratiometric detection of *β*-galactosidase and live cell imaging

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Abstract

β-Galactosidase (*β*-gal) is an important biomarker for primary ovarian cancers and cell senescence; however, a fast response fluorescent probe for ratiometric monitoring is still rare. A novel, ratiometric water-soluble fluorescent probe (**FLM**) for *β*-gal was developed. The emission ratio F_{550}/F_{450} reached the maxima at about 5 minutes and can be used for real-time detection of *β*-gal; the ratio gained an ultimate enhancement of about 260-fold. The ratio (F_{550}/F_{450}) displayed brilliant *β*-gal-dependent performance and responded linearly with *β*-gal activity. The probe showed wonderful biocompatibility and was successfully used for the bioimaging of endogenous *β*-gal in the human ovarian cancer cell line OVCAR-3.

Graphical Abstracts: