



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Lieferung & Zahlungsart

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

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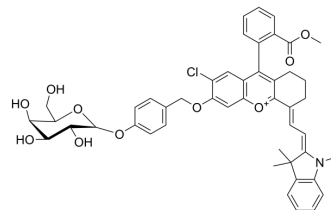
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## NIR-βgal-2

Cat. No.:	HY-151890
Molecular Formula:	C <sub>47</sub> H <sub>47</sub> ClNO <sub>10</sub> <sup>+</sup>
Molecular Weight:	821.33
Target:	Fluorescent Dye
Pathway:	Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	NIR-βgal-2 is a β-galactosidase-activated near-infrared fluorescent probe with superior sensitivity. NIR-βgal-2 can be used for visualizing β-galactosidase in breast cancer <sup>[1]</sup> .
<b>In Vitro</b>	<p>NIR-βgal-2 displays superior sensitivity (detection limit = <math>2.0 \times 10^{-3}</math> U/mL), great affinity (<math>K_m = 1.84 \mu\text{M}</math>), and catalytic efficiency (<math>k_{cat}/K_m = 0.24 \mu\text{M}^{-1} \text{s}^{-1}</math>) for β-galactosidase<sup>[1]</sup>.</p> <p>The survival rate of cells (SKOV-3, 4T1, A549, and L02 cells) in the presence of NIR-βgal-2 is higher than 80% after 24 h, suggesting that the probe had low cytotoxicity toward the cells<sup>[1]</sup>.</p> <p>Human ovarian carcinoma cells (SKOV-3 cells) and mouse breast cancer cells (4T1 cells) that endogenously overexpress β-galactosidase are chosen as cell models for this study. In comparison, human normal liver cells (L02 cells) and human lung cancer cells (A549 cells) are selected as negative groups. After incubating with NIR-βgal-2 (5 μM) for 30 min, can observe bright fluorescence signals in SKOV-3 and 4T1 cells, whereas faint NIR fluorescence is observed in A549 and L02 cells. NIR-βgal-2 could differentiate efficiently and rapidly detect β-galactosidase in different cells and can distinguish cancer cells that overexpress β-galactosidase<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
<b>In Vivo</b>	<p>NIR-βgal-2 (tumor injection; 100 μM/25 μL; 0, 10, 20, 30, and 60 min; Ex=640 nm, Em=695-770 nm) observes an intense signal in the tumor area in 4T1-bearing mice<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

### REFERENCES

[1]. Qian Wu, et al. Evolving an Ultra-Sensitive Near-Infrared β-Galactosidase Fluorescent Probe for Breast Cancer Imaging and Surgical Resection Navigation. ACS Sens. 2022 Nov 16.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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