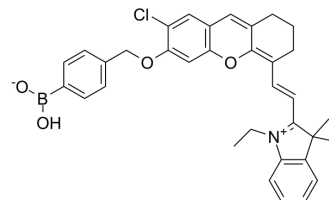


NIR-H2O2

Cat. No.:	HY-D1065
Molecular Formula:	C ₃₄ H ₃₃ BClNO ₄
Molecular Weight:	565.89
Target:	Others
Pathway:	Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	NIR-H2O2 is a cell-permeable near-infrared (NIR) fluorescent turn-on sensor. NIR-H2O2 has both absorption and emission in the NIR region. NIR-H2O2 responds to H ₂ O ₂ with a large turn-on NIR fluorescence signal upon excitation in the NIR region. NIR-H2O2 is capable of imaging endogenously produced H ₂ O ₂ in living cells and mice ^[1] .
In Vitro	NIR-H2O2 is highly selective to H ₂ O ₂ over other typical ROS and biorelevant species ^[1] . HeLa cells incubated with NIR-H2O2 (5 μM) for 30 min at 37 °C provide almost no fluorescence. However, when the living HeLa cells loaded with NIR-H2O2 are further treated with H ₂ O ₂ , they give strong fluorescence. NIR-H ₂ O ₂ is cell membrane permeable and responsive to H ₂ O ₂ in the living cells. When stimulated by phorbol myristate acetate (PMA), macrophage cells may produce endogenous H ₂ O ₂ . The living RAW264.7 macrophage cells loaded with only the NIR sensor NIR-H2O2 (1 μM) display almost no fluorescence. However, the macrophage cells coincubated with PMA (3.0 μg/mL) and the sensor NIR-H2O2 (1 μM) exhibit a dramatic enhancement in the red emission. NIR-H2O2 is capable of fluorescent imaging of endogenously produced H ₂ O ₂ in the living RAW264.7 macrophage cells. The mitochondria staining experiments suggest that the sensor mainly associates with the mitochondria of RAW264.7 macrophage cells ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The H ₂ O ₂ production in vivo was generated by activated macrophages and neutrophils in a lipopolysaccharide (LPS) model of acute inflammation. The mice treated with both LPS and NIR-H2O2 exhibit a significantly higher fluorescence readout than the mice untreated or treated with only NIR-H2O2. The mice loaded with LPS and NIR-H2O2 have approximately 10- and 20-fold higher fluorescence intensity than the mice loaded with saline and the sensor and the mice loaded with saline, respectively ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Yuan L, et al. A unique approach to development of near-infrared fluorescent sensors for in vivo imaging. J Am Chem Soc. 2012 Aug 15;134(32):13510-23.

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

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