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- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!

Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

NpFR1

Reversible fluorescence intensity-based redox sensor
Catalog No. SIH-181

StressMarq Biosciences INC.
Discovery through partnership | Excellence through quality

Overview

Product Name

NpFR1

Description

Reversible fluorescence intensity-based redox sensor

Molecular Formula

CIIHIINIOI

Molecular Weight

431.45

Properties

Storage Temperature

-20ºC

Shipping Temperature

Blue Ice or 4ºC

Product Type

Redox Probe

Solubility

Soluble in DMSO

Source

Synthetic

Appearance

Red Solid

SMILES

C1(N(C(C2=CC5=C(C3=CC=CC1=C23)N(C4=NC(NC(C4=N5)=O)=O)CCC)=O)CCCC)=O

InChI

InChI=1S/C23H21N5O4/c1-3-5-10-28-21(30)13-8-6-7-12-16(13)14(22(28)31)11-15-18(12)27(9-4-2)19-17(24-15)20(29)26-23(3

InChIKey

C5(C2=C1C(=CC4=C(C1=CC=C2)N(C3=NC(NC(C3=N4)=O)=O)CCC)C(N5CCCC)=O)=O

Safety Phrases

Classification: Caution: Substance not yet fully tested.

Safety Phrases:
S22 - Do not breathe dust
S24/25 - Avoid contact with skin and eyes
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

Cite This Product

NpFR1 (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SIH-181)

Biological Description

Research Areas

Cancer, Oxidative Stress

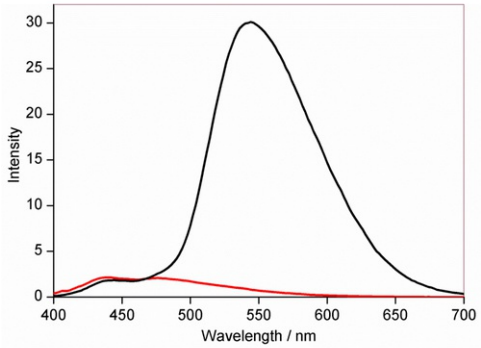
Scientific Background

NpFR1, or napthalimide-flavin redox sensor 1, is a novel flavin molecule that exhibits a greater than 100-fold increase in fluorescence upon oxidation, and is easily reversible. In the oxidative form, is shows a maximum absorption at 395 and 463nm, max admission at 545nm. Treatment with a mild reducing agent (including sodium thiosulfate, sodium cyanoborohydride, DTT and glutathione) gave the reduced form which exhibited 110-fold lower absorbance, and 125-fold lower emission. Re-oxidation to its original fluorescence can be achieved by air or by hydrogen peroxide.

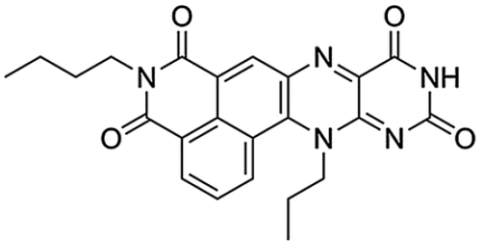
References

1. Yeow J., Kaur A.K., Anscomb M.D., and New E.J. (2014) Chem. Commun. 50: 8181-8184.

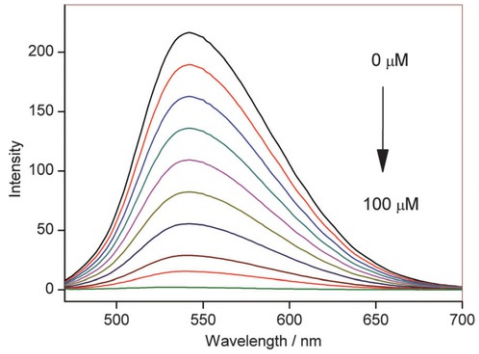
Product Images



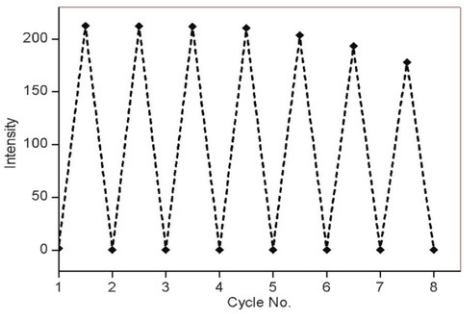
Fluorescence behavior of NpFR1 (SIH-181) in the oxidized (black) and reduced (red) forms, using 50 µM. Excitation: 405 or 488 nm (not shown). Emission: 490 600 nm, with peak at 545 nm.



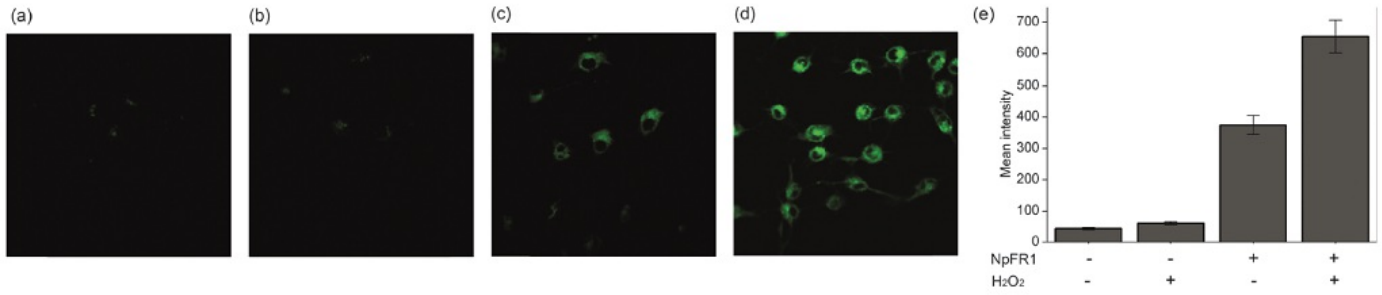
Chemical structure of NpFR1 (SIH-181), a reversible fluorescence intensity-based redox sensor. This image is from Chem. Commun., 2014, 50, 8181, and licensed under a Creative Commons Attribution 3.0 Unported Licence (http://creativecommons.org/licenses/by/3.0/).



Fluorescence emission of NpFR1 (SIH-181, 5 mM, lex = 405 nm) with the incremental addition of sodium dithionite. All spectra were acquired in HEPES buffer (100 mM, pH 7.4). This image is from Chem. Commun., 2014, 50, 8181, and licensed under a Creative Commons Attribution 3.0 Unported Licence (http://creativecommons.org/licenses/by/3.0/).



Fluorescence response of NpFR1 (SIH-181) to cycles of oxidation and reduction. Reduction was achieved with sodium dithionite (100mM) followed by re-oxidation with 250mM H2O2. Spectra were recorded 5 min after the addition of reducing and oxidising agents. All spectra were acquired in HEPES buffer (100 mM, pH 7.4). This image is from Chem. Commun., 2014, 50, 8181, and licensed under a Creative Commons Attribution 3.0 Unported Licence (http://creativecommons.org/licenses/by/3.0/).



Imaging of NpFR1 (SIH-181) in 3T3-L1 preadipocytes treated with (a) vehicle control (b) H2O2 (100 mM, 2 min), (c) NpFR1 (50 mM, 2 h) and (d) NpFR1 (50 mM, 2 h) followed by H2O2 (100 mM, 2 min). Scale bar represents 50 mm, lex = 405 nm. (e) Integrated emission from 510 nm to 610 nm. Values are the mean ratio generated from the intensity from five fields of cells. Error bars represent standard error measurement (s.e.m.). The layout of this image was modified for optimal display from the original Chem. Commun., 2014, 50, 8181, and licensed under a Creative Commons Attribution 3.0 Unported Licence (http://creativecommons.org/licenses/by/3.0/).

Product Citations (0)

Currently there are no citations for this product.

Reviews

There are no reviews yet.