SANTA CRUZ BIOTECHNOLOGY, INC.

Luciferase (C-12): sc-74548

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Luciferase isolated from the common North American firefly, *Photinus pyralis*, is one of the most extensively studied enzymes that catalyze light production in bioluminescent organisms. Luciferase belongs to the ATP-dependent AMP-binding enzyme family. It produces green light with a wavelength of 562 nM. Following is the chemical catalytic reaction, which is catalyzed by Luciferase: *Photinus* Luciferin + O_2 + ATP = oxidized *Photinus* Luciferin + CO_2 + AMP + diphosphate + light.

SOURCE

Luciferase (C-12) is a mouse monoclonal antibody raised against amino acids 251-550 mapping at the C-terminus of Luciferase of *Photinus pyralis* origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Luciferase (C-12) is available conjugated to agarose (sc-74548 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74548 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74548 PE), fluorescein (sc-74548 FITC), Alexa Fluor® 488 (sc-74548 AF488), Alexa Fluor® 546 (sc-74548 AF546), Alexa Fluor® 594 (sc-74548 AF594) or Alexa Fluor® 647 (sc-74548 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74548 AF680) or Alexa Fluor® 790 (sc-74548 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Luciferase (LCF01 (21)) is recommended for detection of Luciferase of *Photinus pyralis* origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Luciferase: 62 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

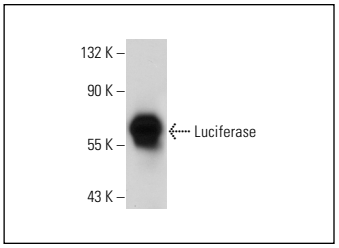
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

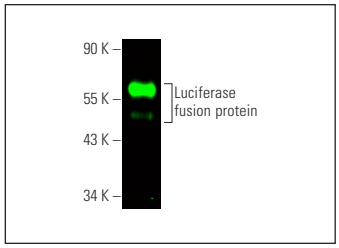
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



Luciferase (C-12): sc-74548. Western blot analysis of *Photinus pyralis* recombinant Firefly Luciferase protein.



Luciferase (C-12) Alexa Fluor® 680: sc-74548 AF680. Direct near-infrared western blot analysis of firefly recombinant Luciferase fusion protein. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Smirnova, N.A., et al. 2011. Development of Neh2-Luciferase reporter and its application for high throughput screening and real-time monitoring of Nrf2 activators. Chem. Biol. 18: 752-765.
2. Gao, J., et al. 2012. The use of chitosan based hydrogel for enhancing the therapeutic benefits of adipose-derived MSCs for acute kidney injury. Biomaterials 33: 3673-3681.
3. Karuppagounder, S.S., et al. 2013. *In vitro* ischemia suppresses hypoxic induction of hypoxia-inducible factor-1α by inhibition of synthesis and not enhanced degradation. J. Neurosci. Res. 91: 1066-1075.
4. Lozano, J.C., et al. 2014. Efficient gene targeting and removal of foreign DNA by homologous recombination in the picoeukaryote *Ostreococcus*. Plant J. 78: 1073-1083.
5. Wang, F., et al. 2016. S6K-STING interaction regulates cytosolic DNA-mediated activation of the transcription factor IRF3. Nat. Immunol. 17: 514-522.
6. Svitkin, Y.V., et al. 2017. N1-methyl-pseudouridine in mRNA enhances translation through eIF2α-dependent and independent mechanisms by increasing ribosome density. Nucleic Acids Res. 45: 6023-6036.
7. Lin, W., et al. 2019. Lgr5-overexpressing mesenchymal stem cells augment fracture healing through regulation of Wnt/ERK signaling pathways and mitochondrial dynamics. FASEB J. 33: 8565-8577.
8. Wadsworth, P.A., et al. 2019. High-throughput screening against protein: protein interaction interfaces reveals anti-cancer therapeutics as potent modulators of the voltage-gated Na^+ channel complex. Sci. Rep. 9: 16890.
9. Sha, T.W., et al. 2020. Influenza A virus NS1 optimises virus infectivity by enhancing genome packaging in a dsRNA-binding dependent manner. Virol. J. 17: 107.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.