

# Luciferase (Luci 21 1-107): sc-57603

## 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<sub>2</sub> + ATP = oxidized *Photinus* Luciferin + CO<sub>2</sub> + AMP + diphosphate + light.

## REFERENCES

1. Wood, K.V., et al. 1985. Synthesis of active firefly Luciferase by *in vitro* translation of RNA obtained from adult lanterns. *Biochem. Biophys. Res. Commun.* 124: 592-596.
2. de Wet, J.R., et al. 1987. Firefly Luciferase gene: structure and expression in mammalian cells. *Mol. Cell. Biol.* 7: 725-737.
3. Keller, G.A., et al. 1987. Firefly Luciferase is targeted to peroxisomes in mammalian cells. *Proc. Natl. Acad. Sci. USA* 84: 3264-3268.
4. Franks, N.P., et al. 1998. Structural basis for the inhibition of firefly Luciferase by a general anesthetic. *Biophys. J.* 75: 2205-2211.
5. Dubuisson, M., et al. 2004. Firefly Luciferin as antioxidant and light emitter: the evolution of insect bioluminescence. *Luminescence* 19: 339-344.
6. Vishwanath, R.P., et al. 2005. A quantitative high-throughput chemotaxis assay using bioluminescent reporter cells. *J. Immunol. Methods* 302: 78-89.
7. Branchini, B.R., et al. 2005. Red- and green-emitting firefly Luciferase mutants for bioluminescent reporter applications. *Anal. Biochem.* 345: 140-148.
8. Zhao, H., et al. 2005. Emission spectra of bioluminescent reporters and interaction with mammalian tissue determine the sensitivity of detection *in vivo*. *J. Biomed. Opt.* 10: 41210.

## SOURCE

Luciferase (Luci 21 1-107) is a mouse monoclonal antibody raised against full length native Luciferase of *Photinus pyralis* origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

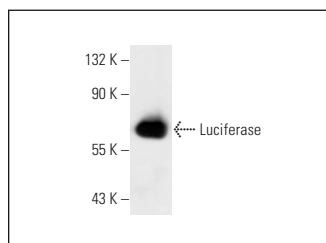
Luciferase (Luci 21 1-107) is recommended for detection of Luciferase of *Photinus pyralis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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.

## DATA



Luciferase (Luci 21 1-107): sc-57603. Western blot analysis of *Photinus pyralis* recombinant Luciferase.

## SELECT PRODUCT CITATIONS

1. Hwang, S., et al. 2008. Persistent gammaherpesvirus replication and dynamic interaction with the host *in vivo*. *J. Virol.* 82: 12498-12509.
2. Zheng, W., et al. 2016. Far upstream element-binding protein 1 binds the 3' untranslated region of PKD2 and suppresses its translation. *J. Am. Soc. Nephrol.* 27: 2645-2657.
3. Perez-Leal, O., et al. 2017. Pharmacological stimulation of nuclear factor (erythroid-derived 2)-like 2 translation activates antioxidant responses. *J. Biol. Chem.* 292: 14108-14121.

## RESEARCH USE

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



See **Luciferase (C-12): sc-74548** for Luciferase antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.