SANTA CRUZ BIOTECHNOLOGY, INC.

Luciferase (251-550): sc-32896

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.

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.

SOURCE

Luciferase (251-550) is a rabbit polyclonal 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 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.

RESEARCH USE

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

PROTOCOLS

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

APPLICATIONS

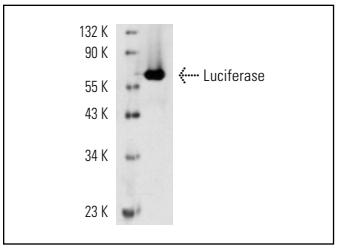
Luciferase (251-550) is recommended for detection of Luciferase of *Photinus pyralis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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 SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Luciferase (Luci17): sc-57604. Western blot analysis of *Photinus pyralis* recombinant Luciferase.

SELECT PRODUCT CITATIONS

1. Argyros, O., et al. 2008. Persistent episomal transgene expression in liver following delivery of a scaffold/matrix attachment region containing non-viral vector. Gene Ther. 15: 1593-1605.
2. Terashima, M., et al. 2010. *In vivo* bioluminescence imaging of inducible nitric oxide synthase gene expression in vascular inflammation. Mol. Imaging Biol. 13: 1061-1066.
3. Kim, H.K., et al. 2012. A split luciferase complementation assay for studying *in vivo* protein-protein interactions in filamentous ascomycetes. Curr. Genet. 58: 179-189.
4. Merlet, E., et al. 2013. A calcium-sensitive promoter construct for gene therapy. Gene Ther. 20: 248-254.