

Luciferase

From *Photinus pyralis* (American firefly)

Cat. No. 10 411 523 001

1 mg

 **Version 17**

Content version: March 2017

Store at +2 to +8°C

1. What this Product Does

Contents

Lyophilizate, crystallized twice.

Storage and Stability

- Store dry at +2 to +8°C; a decrease in activity of approximately 20% may occur within 12 months.
- Store the reconstituted solution in aliquots at –15 to –25°C.
- Avoid repeated freezing and thawing.
- Ⓢ Do not store in plastic vessels.
- ⚠ The lyophilizate is shipped at +15 to +25°C.

Application

Determination of ATP in ATP-generating or -consuming reactions. Determination of the activity of enzymes such as creatine kinase and ATPases. Under optimal conditions, 1 photon is released per molecule ATP in the bioluminescence assay.

1 mg is sufficient for approximately 5,000 ATP determinations in the concentration range of 0.1 nM to 1 μM.

Product Characteristics

| | |
|--------------------------|---|
| Description | <i>Photinus</i> luciferin: oxygen 4-oxidoreductase (decarboxylating, ATP-hydrolyzing) EC 1.13.12.7 |
| Contaminants | <1 mU ATPase/mg lyophilizate, and <10 mU nucleoside diphosphatase kinase/mg lyophilizate. The lyophilizate contains neither luciferin nor arsenate. |
| Molecular Weight | 100,000 |
| Purity | The lyophilizate contains neither luciferin nor arsenate. There are only traces of MgSO ₄ and EDTA present. |
| Specific Activity | approximately 8 mU/mg protein at +25°C with 0.1 mM luciferin and 0.7 mM ATP as the substrates (0.1 M Tris-acetate, pH 7.75) |

2. How to Use this Product

2.1 Reconstitution

Cool the original glass vial (1 mg or 5 mg protein, respectively) to 0°C in an ice-bath and dissolve the containing luciferase by adding 1 ml or 5 ml, respectively, 0.5 M ice-cold Tris-acetate buffer, pH 7.5, and let it stand for 10 min. (The dissolved enzyme is sensitive to shaking and to storage in plastic vessels). This concentrated solution is stable for several months when stored frozen in portions of approximately 50 μl. Diluted solutions are unstable and should be prepared directly before use and should be kept in an ice-bath.

One microgram luciferase corresponds to approximately 10⁷ arbitrary luciferase units.

2.2 Procedure

- Ⓢ The preparation can be used in the luminometric ATP measurement in the detection range 10⁻⁵ to 10⁻¹² M (ATP-HS II).
- Ⓢ Proceed according to the protocol for the test ATP-HS II*. The corresponding pack insert is available in the internet, www.sigma-aldrich.com

* available from Roche Diagnostics

3. Additional Information on this Product

Changes to Previous Version

Editorial Changes

Trademarks

All product names and trademarks are the property of their respective owners.

Disclaimer of License

For patent license limitations for individual products please refer to: [List of biochemical reagent products](#)

Ordering Information

| Product | Pack Size | Cat No. |
|--|-------------------------|--|
| ATP Bioluminescence Assay Kit HS II | 1 kit | 11 699 709 001 |
| Luciferase from <i>Photobacterium fischeri</i> | 2 mg protein | 10 476 498 001 |
| NAD(P)H:FMN Oxidoreductase | 20 U | 10 476 480 001 |
| D(-)-Luciferin | 10 mg 50mg | 10 411 400 001 11 626 353 001 |
| NADH, approx. 100%, disodium salt | 500 mg | 10 107 735 001 |
| NADPH, approx. 98%, tetrasodium salt | 100 mg 500 mg 1 g | 10 107 824 001 10 621 692 001 10 621 706 001 |

Contact and Support

To ask questions, solve problems, suggest enhancements and report new applications, please visit our [Online Technical Support Site](#).

To call, write, fax, or email us, visit sigma-aldrich.com, and select your home country. Country-specific contact information will be displayed.