Luciferin is essential in performing your bioluminescent assay – and the quality of your research will depend on the quality of your luciferin. That’s why Xenogen, the world leader in the area of in vivo biophotonic imaging, now offers high quality luciferin at an affordable price.

Luciferin is a chemical substance found in the cells of various bioluminescent organisms. When luciferin is oxidized under the catalytic effects of luciferase and ATP, a bluish-green light is produced. Because the reaction is dependent on ATP, it allows researchers to determine the presence of energy or life. Firefly luciferin is a particularly good reporter for in vivo biophotonic imaging due to properties of its emission spectra.

Luciferin can be used in a number of ways. It can be used in a variety of in vitro assays, where the production of light can be monitored with either a luminometer or a scintillation counter. It can also be used to monitor light production in vivo, and can be monitored with a Xenogen IVIS® Imaging System. Because luciferin can penetrate cell membranes, it allows transformed cells to be monitored for luciferase activity.

There are many considerations when choosing a luciferin substrate such as dosing and toxicity. It is important to know that you are using the highest quality Luciferin for your experiments. You might want to ask:

- Has your Luciferin been validated by Xenogen scientists?
- Is your Luciferin used exclusively by Xenogen physicists to calibrate IVIS® Imaging Systems?
- Has your Luciferin been used in countless publications?

Luciferin Toxicity

Luciferin is an albumin with a heterocyclic prosthetic group found in fireflies and other animals which, in the presence of ATP and the enzyme luciferase, becomes luminescent. Thanks to the similarity of luciferin to albumin, it does not cause an immune response. Even though luciferin is able to freely cross the blood brain barrier and the placental barrier, toxicity appears low. See bibliography listing on page 2 for more detailed information.

Frequently Asked Questions

How do you administer luciferin?

Mice with lux-bearing bacteria do not need luciferin to glow. In the tumor models and transgenic models, luciferin is administered intraperitoneally (concomitant with anesthesia).

How well does luciferin distribute?

Luciferin distributes quickly and easily throughout the animal.

How do the animals respond to the repeated administration of luciferin substrate?

Luciferin does not affect the animals deleteriously (no evidence of toxicological or immunological effects).
Do you need to administer luciferin substrate to the animals before imaging?

In bacteria, the entire luciferase operon is stably integrated on the chromosome. This eliminates the need for exogenous luciferin substrate in the bacterial models. The tumor models and transgenic models rely on the exogenous administration of luciferin.

**Luciferin Bibliography**


