InVivoSwiss

Slow Release Luciferin

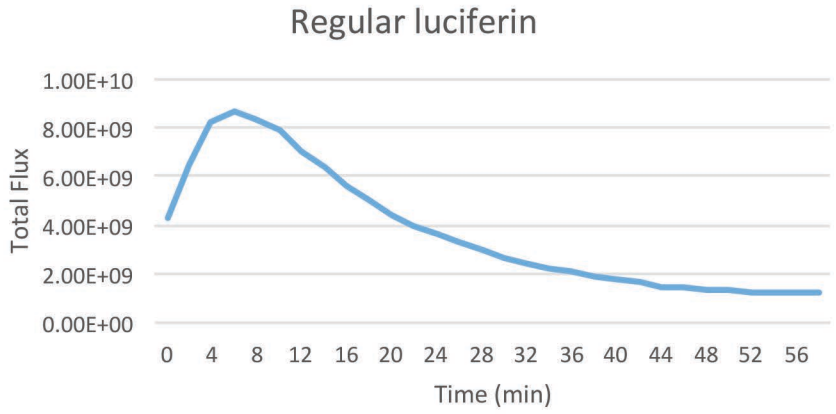
Caution: For Laboratory Use. A product for research purposes only

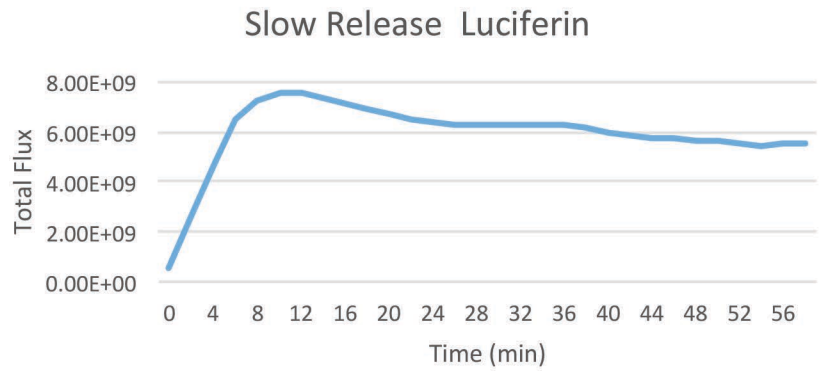
Bioluminescence Imaging Agent

Technical information

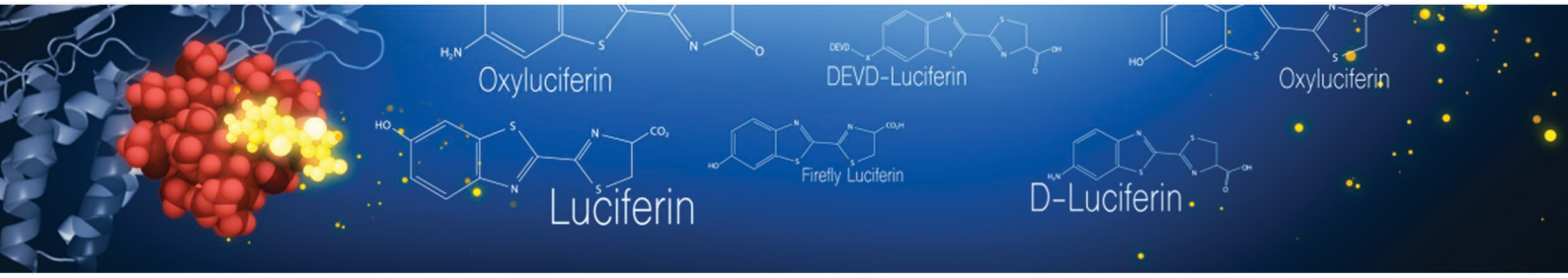
Description:

Whole animal non-invasive bioluminescent imaging has been utilized to study multiple biological processes such as gene expression, protein-protein interaction and cellular trafficking. It is widely used for in vivo studies and preclinical drug development of a range of diseases such as cancer and infectious disease as well as for stem cell research. Since regular luciferin exhibits relatively short circulatory half-life, we developed a slow release luciferin formulation that significantly extends its in vivo circulatory half-life, thus making the possibility of long-term observations in animals possible. Long half-life and slow decay of the signal is also ideal for 3D tomographical imaging applications.





Comparison of bioluminescent signal kinetics of regular and slow release luciferins. 4T1 cells were injected subcutaneously into the right flank of 6weeks old nude mice. Once the tumors reached 0.5 cm3 in size, mice were injected with 3mg of either regular luciferin or slow release luciferin and imaged using IVIS Spectrum instrument over a period of 60 min. Data show that the signal from regular luciferin changes 4-5 fold over a period of 1 hr whereas the signal from slow release luciferin changes only 10-20% over the same period of time.



Imaging and Applications:

- Long term imaging of BLI expressing cells in vivo
- 3D bioluminescent tomography
- Recommended dose is 3 mg per mouse injected i.p.

References:

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2. Liu JJ, Wang WG, Dicker DT, El-Deiry WS. Bioluminescent imaging of TRAIL-induced apoptosis through detection of caspase activation following cleavage of DEVD–aminoluciferin. Cancer Biol. Ther. 2005; 4: 885–892.

3. Monsees T, Miska W, Geiger R. Synthesis and characterization of a bioluminogenic substrate for α-chymotrypsin. Anal. Biochem. 1994; 221: 329–334.

4. Shinde R, Perkins J, Contag CH. Luciferin derivatives for enhanced in vitro and in vivo bioluminescence assays. Biochemistry 2006; 45: 11103–11112.

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