InVivoSwiss

Hydrogen Sulfide Imaging Agent

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

Caged Luciferin Imaging Agent

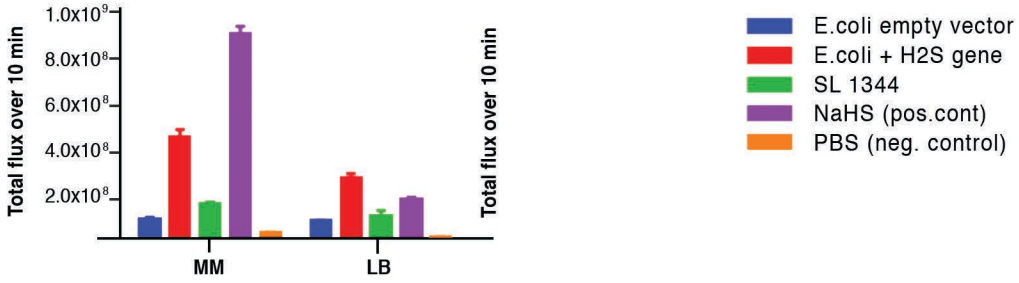
Technical information

Description:

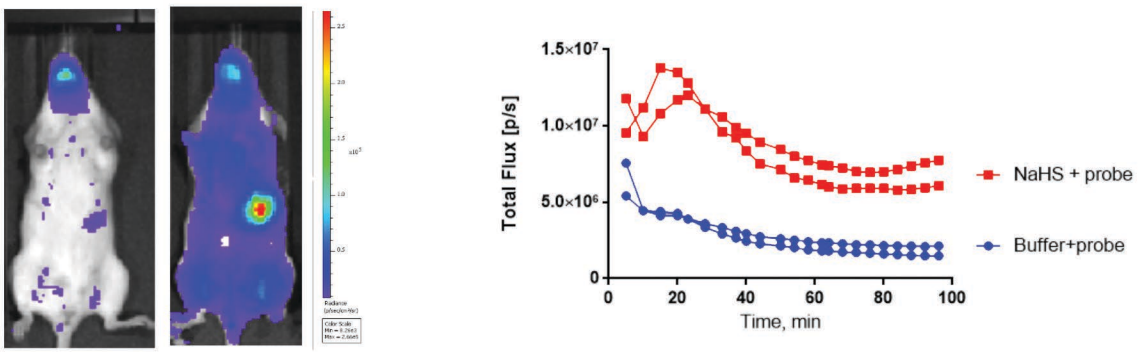
H2S is recognized as one of the most important gasotransmitter for regulating cardiovascular, neuronal, immune, endocrine and gastrointestinal systems, along with nitric oxide and carbon monoxide [1], [2] and [3]. Altered levels of H2S have been linked to many diseases, such as Alzheimer's disease, Down's syndrome, diabetes and liver cirrhosis [4], [5] and [6]. Hydrogen Sulfide Imaging agent is the caged luciferin bioluminescent imaging probe that detects H2S concentration with high sensitivity, high spatial and temporal resolution as well as selectivity.

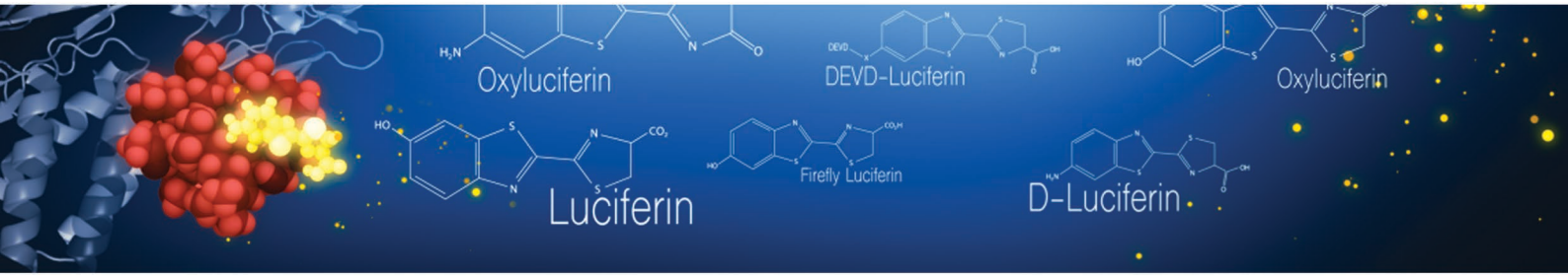
Technical data:

Selective bioluminescent detection of H2S using hydrogen sulfide caged luciferin probe. Hydrogen sulfide probe was added to the culture of E.Coli cells with or without expression of H2S gene. Cells were incubated with the probe for 5 min and bioluminescence was measured using IVIS instrument for 1hr. The graph shows integrated signal AUC.



Bioluminescent signal from hydrtogen sulfide icaged luciferin probe in FVB-luc+ mice. (A) Representative image (60 min postinjection) for mice gavaged with the probe immediately after gavage of NaHS (left image) or buffer only (right image) (B)





Total photon flux was monitored for 90 min for mice injected with the probe ± NaHS. Mice gavaged with NaHS show 2-3 folds higher bioluminescence than the control mice injected with buffer only.

Imaging and Applications:

- Imaging of hydrogen sulfide levels in cell culture and in living animals in vivo
- High sensitivity, selectivity and low background to noise ratio
- Recommended imaging time is 30-90 min post injection of the probe
- Recommended dose is 0.01mg per mouse delivered by oral gavage

References:

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3. D'AutrEaux B, Toledano MB. ROS as signaling molecules: Mechanisms that generate specificity in ROS homeostasis. Nat Rev Mol Cell Biol. 2007;8:813–824. [PubMed]

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5. Winterbourn CC. Reconciling the chemistry and biology of reactive oxygen species. Nat Chem Biol. 2008;4:278–286. [PubMed]

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