

# **Heme oxygenase transgenic reporter mouse (HO Luc Mouse)**

HO-1-luc 15 as a transgene in mice.

A 15kb HO-1 promoter (provided by Y. Alam) and the entire luciferase coding sequence from pGL3-Basic vector (Promega) were cloned into the plasmid pBluescript KS(+) (Stratagene). This construct was introduced into mouse embryos (strain FVB) and the animals were bred to homozygosity. These mice respond, with light emission that can be detected externally, to the presence of heavy metals and metalloporphyrins and to physiologic stresses such as hyperoxia.

No animal exists that has the capabilities of in vivo sensing of environmental stresses and heme analogs with an externally detectable signal.

## **Advantages**

- Externally detectable signal that relates to gene expression patterns relative to changes in physiology, the presence of toxic compounds or drugs, and in response to general stress as an animal model of human biology and disease.
- Either the promoter or the reporter component of the transgene could be modified for different expression patterns or different types of signals that could be detected via fluorescence, MRI, PET, or other imaging modalities.

## **Publications**

- Journal of Perinatology, December 2001, Volume 21, Supplement 1, Pages S119-S124

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