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## Bioluminescent Probes For Visualizing RNA Dynamics

Tech ID: 33828 / UC Case 2022-99D-0

### BRIEF DESCRIPTION

A novel bioluminescent platform for in vivo tracking and visualization of RNA dynamics without the need for excitation light.

### FULL DESCRIPTION

Researchers at UCI have developed a groundbreaking approach to RNA imaging by employing bioluminescent probes, termed RNA lanterns, which enable the visualization of RNA dynamics in live cells and animals. By engineering small RNA tags to recruit light-emitting luciferase fragments upon transcription, this platform allows for the sensitive detection of RNA targets, overcoming limitations associated with traditional fluorogenic probes.

### SUGGESTED USES

- » Research tool for studying RNA folding, structure, and dynamics in vivo, enhancing our understanding of RNA biology.
- » Potential therapeutic agent tracking within live organisms, facilitating the development of RNA-based treatments.
- » Advancement in the field of molecular biology, providing a novel platform for RNA visualization in live cells and animals.

### ADVANTAGES

- » Leverages bioluminescence, avoiding phototoxicity and tissue damage associated with fluorescence-based methods.
- » Enables sensitive detection of RNA with a single tag, in contrast to fluorescent platforms that require multiple repeats.
- » Facilitates visualization of RNA dynamics in live animals, providing a more comprehensive understanding of RNA biology.
- » Modular design of the MBS/PBS hairpin allows for future multiplexing capabilities.

### PATENT STATUS

Patent Pending

### RELATED MATERIALS

### CONTACT

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### OTHER INFORMATION

#### CATEGORIZED AS

- » **Biotechnology**
- » Other
- » **Imaging**
- » Molecular
- » **Research Tools**
- » Nucleic Acids/DNA/RNA

#### RELATED CASES

2022-99D-0

» A modular platform for bioluminescent RNA tracking Kevin K. Ng, Kyle H. Cole, Lila P. Halbers, Christelle E.T. Chan, Erin B. Fuller, Chelsea Callicoatte, Mariajose Metcalfe, Claire C. Chen, Ahfnan A. Barhoosh, Edison Reid-McLaughlin, Alexandra D. Kent, Oswald Steward, Andrej Lupták, Jennifer A. Prescher bioRxiv 2022.07.02.498144

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