

Semi-synthetic split luciferase emitting bright red

Invention

This invention introduces an innovative semisynthetic NanoLuc (sNLuc) system, engineered to emit bright, red-shifted bioluminescence. Unlike conventional NanoLuc systems with blue light emission, this novel approach uses a split NanoLuc enzyme paired with a synthetic peptide functionalized with fluorophores. By leveraging Bioluminescence Resonance Energy Transfer (BRET), the system achieves emission within the red spectrum, significantly improving tissue penetration and detection in complex biological environments. Demonstrating remarkable brightness and specificity, the sNLuc system supports advanced imaging applications in blood or through tissue, making it an indispensable tool for cutting-edge biological research.

Features & Benefits

- **Red-Shifted Emission (650-950 nm):** Superior tissue penetration and reduced background interference, ideal for live-cell and in vivo imaging.
- **Enhanced Light Output/Sensitivity:** Reduction of background in complex environments.
- **Modular System:** Compatible with a variety of fluorophores, enabling tailored solutions for specific research needs.
- **Simplified Assembly:** Easy-to-use split enzyme complementation system with high specificity and rapid deployment for experiments.

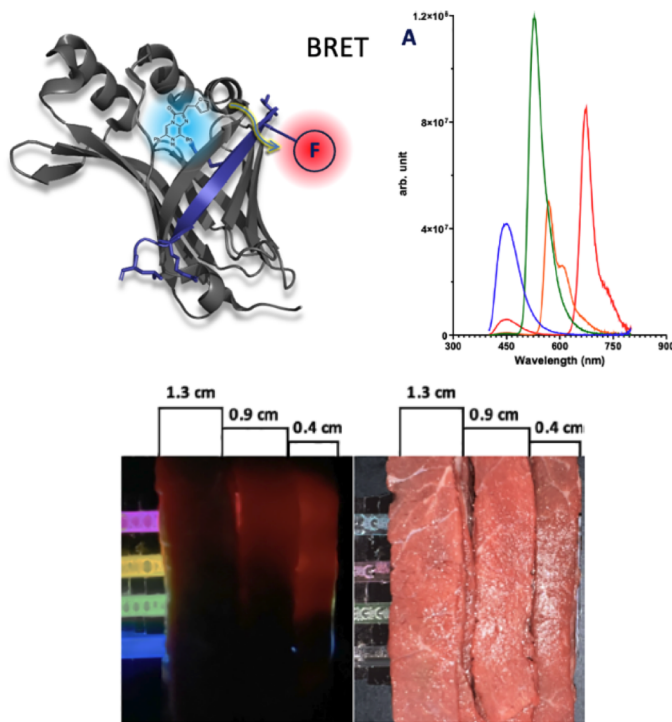
Intellectual Property

A US patent application will be filed before 8 May 2025 (grace period)

Technology Readiness Level

The sNLuc system has been extensively tested and validated in research-relevant scenarios, including biological conditions (e.g., blood and tissue penetration)

Key data



Applications

- *In vivo* imaging
- Multiplexed imaging assays
- Any imaging applications for which standard luciferases are currently used

Partnership sought

Available for exclusive licensing and R&D collaboration

Contact & Inquiries

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