



## A Ratiometric Biosensor To Measure Intracellular NADH/Nad<sup>+</sup> Redox

[View U.S. Patent Application Publication No. US-2020-0224283 in PDF format.](#)

**WARF: P190071US02**

Inventors: Srivatsan Raman, Yang Liu, Robert Landick

---

### The Invention

Described herein is a redox biosensor system for measurement of NADH/NAD<sup>+</sup> ratio including a host strain or cell-free system including first and a second expression cassette; the first expression cassette including, in operable communication, a constitutive promoter and a gene encoding a Rex allosteric transcription factor that regulates gene expression by binding to NAD(H); and the second expression cassette including, in operable communication, a promoter regulated by the Rex allosteric transcription factor, and a gene encoding a reporter protein, wherein the first expression cassette expresses the Rex allosteric transcription factor, and, in the presence of NAD(H), the Rex allosteric transcription factor drives expression of the reporter protein from the second expression cassette, and wherein the expression of the reporter protein is proportional to the NADH/NAD<sup>+</sup> ratio.

### Additional Information

#### For More Information About the Inventors

- [Srivatsan Raman](#)

#### Tech Fields

- [Research Tools : Detection](#)

For current licensing status, please contact Jennifer Gottwald at [jennifer@warf.org](mailto:jennifer@warf.org) or 608-960-9854