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New *Aequorea* Fluorescent Proteins for Cell-Free Bioengineering

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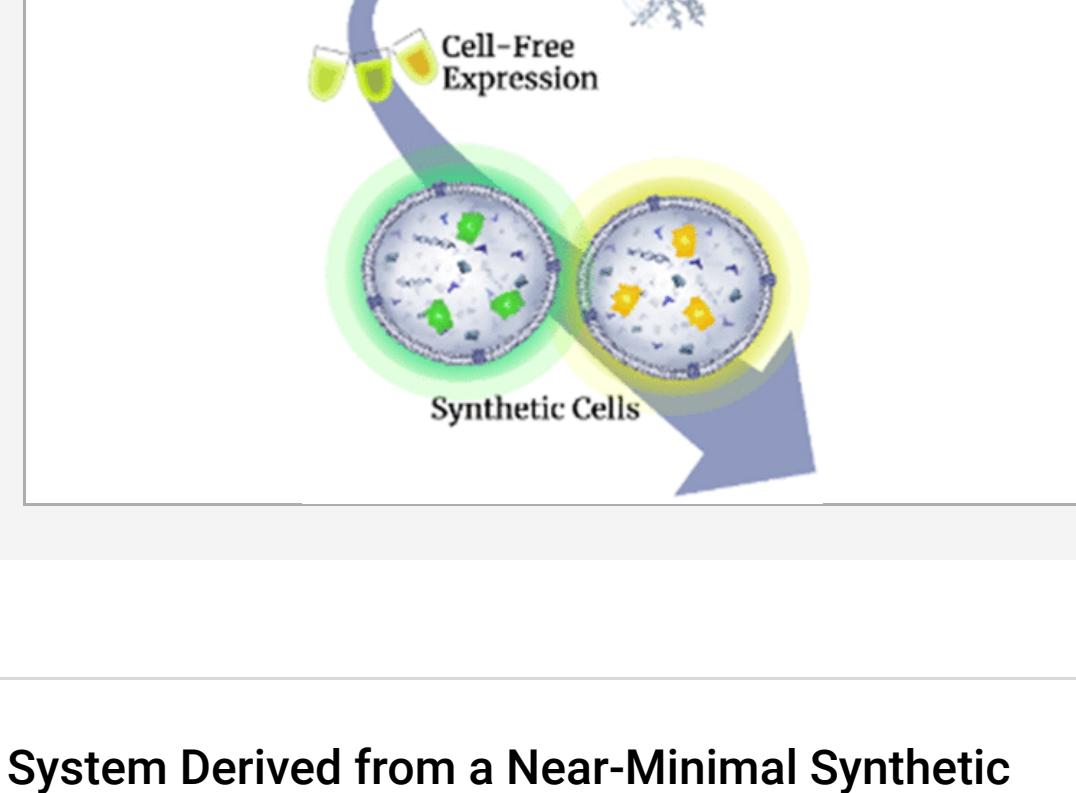


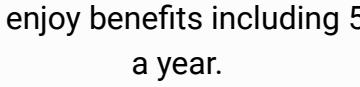
ACS Synthetic Biology

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Abstract

Recently, a new subset of fluorescent proteins has been identified from the *Aequorea* species of jellyfish. These fluorescent proteins were characterized *in vivo*; however, there has not been validation of these proteins within cell-free systems. Cell-free systems and technology development is a rapidly expanding field, encompassing foundational research, synthetic cells, bioengineering, biomanufacturing, and drug development. Cell-free systems rely heavily on fluorescent proteins as reporters. Here we characterize and validate this new set of *Aequorea* proteins for use in a variety of cell-free and synthetic cell expression platforms.

**KEYWORDS:** synthetic cells, cell-free translation, *Aequorea* fluorescent proteins**To access the full text, please choose an option below.****Get Access To This Article**

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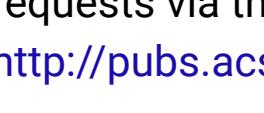
Supporting Information

The Supporting Information is available free of charge at <https://pubs.acs.org/doi/10.1021/acssynbio.3c00057>.

- Western blot analysis of protein expression, comparison of expression of the new fluorescent proteins in original plasmids, liposome purification traces, data for expression in different translation systems, stability of liposome membrane, and expression in anaerobic environment; protein sequences ([PDF](#))

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Supplementary Information
for**New *Aequorea* fluorescent proteins for cell-free bioengineering**Christopher Deich¹, Nathaniel J. Gaut¹, Wakana Sato¹, Aaron E. Engelhart¹, Katarzyna P. Adamala^{1,*}¹ Department of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN US.*Correspondence to kadamala@umn.edu[Share](#) [Download](#)

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