

Nano-Programmed Cross-Kingdom Communication Between Living Microorganisms

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The engineering of chemical communication at the micro/nanoscale is a key emergent topic in micro/nanotechnology, synthetic biology and related areas. However, the field is still in its infancy – previous advances, although scarce, have mainly focused on communication between abiotic micro/nanosystems or between microvesicles and living cells.

Here, we have implemented a nano-programmed cross-kingdom communication involving two different microorganisms and tailor-made nanodevices acting as “nanotranslators”.¹ Information flows from the sender cells (bacteria) to the nanodevice and from the nanodevice to receiver cells (yeasts) in a hierarchical way, allowing communication between two microorganisms that otherwise would not interact.

References

- [1] Beatriz de Luis, Ángela Morellá-Aucejo, Antoni Llopis-Lorente, Javier Martínez-Latorre, Félix Sancenón, Carmelo López, José Ramón Murguía, and Ramón Martínez-Máñez, *Nano Lett.* 5 (2022), 1836.

Figures

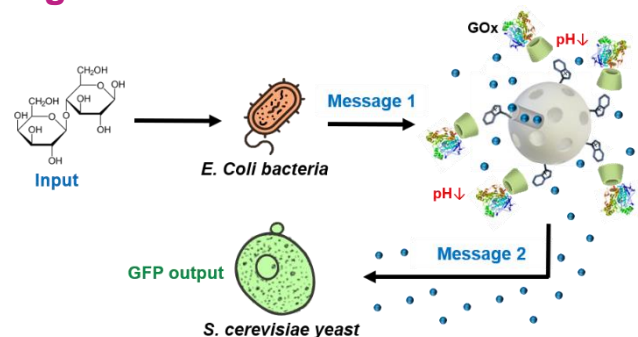


Figure 1. Schematic representation of cross-kingdom communication enabled by nanoparticles acting as nanotranslators.

