

\$10,500 for a bottle of perfume made with 8,000 flowers? Synthetic biology makes royal fragrances available at a fraction of that price

Perfume has historically been the indulgence of the rich. Many of the ingredients used by the nobility to scent the bodies and quarters are rare, hard to source, and require massive amounts of material to produce. For example, it takes [252,000 individual petals](#) (or 8,000 flowers) to produce just 5 milliliters of rose oil. Delicate jasmine flowers are hand-picked in the early hours of dawn to capture their blooming scent. And orange blossoms can only be collected for about two weeks a year due to the short flowering cycle.

Today, perfumers do not have to go to such great lengths to get ingredients. Thanks to the advances in synthetic biology, many of the molecules traditionally sourced from plant or animal materials, can now be produced in engineered microbes using precision fermentation.

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[Conagen](#) has recognized this huge industry problem and has been working to develop clean, sustainable, and cost-effective natural fragrance ingredients using the power of synthetic biology. With the help of DNA sequencing, gene editing, and precision fermentation, scientists at Conagen are recreating the coveted ingredients from rare plants and animals in lab-grown yeast. They are working in partnership with [Sensegen](#), the Flavor & Fragrance division of Blue California, to identify priorities based on areas of consumer demand and tune the quality, purity, and price of their ingredients.

[**This is an excerpt. Read the original post here**](#)