

ENGINEERED JUST FOR You: Pharmageutical-Grade Yoghurt

Forget popping pills: patients could get better by eating voghurt. Richard Yu, an investigator at the Molecular Sciences Institute, Berkeley, is a yoghurt hacker. He describes the dairy product as a "scalable drugdistribution system". By splicing DNA into the genes of Lactobacillus bulgaricus, a bacterium used to make yoghurt, he believes personalised medicines could be delivered in a palatable format, "If you send someone a packet of dried yoghurt powder that's been engineered, and you have milk and a plastic tub, you can make this stuff," Yu says. "You don't need a fermenter, you don't need a standard molecular biology lab: you need a kitchen counter."

Yu is a cofounder of Yovivo! Probiotic. The team's first project involves cutting and pasting the four genes responsible for turning amino acids into resveratrol – a substance that has been linked in human trials to moderating blood sugar levels and improving circulation in adults.

The DIY-bio approach could be applied to more than health: production of MDMA, say, or other more dangerous drugs could be democratised by the method. "The barriers to entry are very low," Yu says. As a result, his team is taking a cautious approach: "Unleashing designer organisms inside your cells, you have to be very careful," he says. "We want to do it properly. We're not cackling scientists, bubbling cauldron and whatnot." TC @yovivoyogurt

Other yoghurt hacks we like

1 Replacing toothpaste
In 2008, MIT created a *Lactobacillus*bulgaricus that makes a
tooth-decay-preventing peptide.

2 Midnight snacking

Indie Biotech, an open-source biotech site, created a recipe for fluorescent yoghurt in 2011.

3 Relieving depression

In 2009, London-based designer Tuur van Balen demonstrated how yoghurt might produce Prozac.

