

'Super yeasts' produce 300 times more protein than previously possible

May 12 2008

Researchers in California report development of a new kind of genetically modified yeast cell that produces complex proteins up to 300 times more than possible in the past. These “super yeasts” could help boost production and lower prices for a new generation of protein-based drugs that show promise for fighting diabetes, obesity, and other diseases, the researchers suggest. Their study is scheduled for the May 14 issue of the *Journal of the American Chemical Society*.

In their report, Lei Wang and Qian Wang explain that the yeasts are intended for speeding production of proteins containing so-called “unnatural amino acids” (UAAs).

Living things normally use the same basic set of 20 amino acids to make proteins. Scientists have made additional amino acids, the UAAs, which show promise for building new proteins with a broad range of medical and industrial applications. However, researchers had had difficulty in efficiently incorporating these UAAs into useful protein products.

Wang and Wang are reporting a solution to that problem. They inserted parts of the simple but highly efficient protein-making machinery of *E. coli* bacteria into the advanced but inefficient protein-making machinery of yeast cells. The result was a best-of-both world’s creation: A genetically-engineered yeast cell that produces complex proteins containing UAAs at levels 300 times higher than normal yeast cells.

Source: ACS

Citation: 'Super yeasts' produce 300 times more protein than previously possible (2008, May 12)
retrieved 2 May 2024 from <https://phys.org/news/2008-05-super-yeasts-protein-previously.html>

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