

## This week in techniques

Approach	Summary	Licensing status	Publication and contact information
<b>Chemistry</b>			
Production of natural compounds and analogs in <i>Saccharomyces cerevisiae</i>	<p>An integrated yeast-based alkaloid biosynthesis platform could offer greater yield and efficiency than current methods using cultivated plants, engineered bacteria or laboratory synthesis, and it should be extendable to any class of natural products. Researchers produced reticuline-derived alkaloids by expressing up to seven alkaloid biosynthesis enzymes in one strain of <i>S. cerevisiae</i>. One yeast strain yielded salutaridine, an alkaloid that previous approaches had not succeeded in producing. Ongoing work includes the exploration of other enzyme combinations to produce new, unnatural alkaloids.</p> <p>At least 10 companies market or are developing natural products and their derivatives to treat various types of cancer, as well as addiction, sickle cell disease and dermatological indications.</p>	Patent applications submitted for the optimization method and for the production of alkaloids	Hawkins, K. & Smolke, C. <i>Nat. Chem. Biol.</i> ; published online Aug. 10, 2008; doi:10.1038/nchembio.105 <b>Contact:</b> Christina D. Smolke, California Institute of Technology, Pasadena, Calif. e-mail: <a href="mailto:smolke@cheme.caltech.edu">smolke@cheme.caltech.edu</a>