

BIOTECHNOLOGY

Fuel from microbes

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Many plants, insects and microbes naturally produce small quantities of alkanes and alkenes — long-chain carbon and hydrogen molecules that are major components of fossil fuels. The biotechnology company LS9, based in South San Francisco, California, has pinpointed the biochemical pathway that bacteria use to do this.

Andreas Schirmer and his colleagues have discovered and patented two genes in cyanobacteria that encode enzymes that convert fatty-acid metabolites into fuel-grade alkanes and alkenes. They expressed these genes in the bacterium *Escherichia coli*, fed it glucose, and showed that it secreted diesel-like fuel that did not need any further chemical conversions. The company is currently scaling up this process.