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(71) Applicant (for all designated States except US): **MYRIANT TECHNOLOGIES LLC** [US/US]; 66 Cummings Park, Woburn, MA 01801 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GRABAR, Tammy** [US/US]; 3 Archstone Cir #10, Reading, MA 01867 (US). **GONG, Wei** [CN/US]; 700 Mill Street Apt #12, Woburn, MA 01801 (US). **YOCUM, R. Rogers** [US/US]; 4 Orchard Lane, Lexington, MA 02420 (US).

(74) Agent: **MANNAN, Ramasamy, M.**; Myriant Technologies LLC, 66 Cummings Park, Woburn, Massachusetts 01801 (US).

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(54) Title: METABOLIC EVOLUTION OF ESCHERCHIA COLI STRAINS THAT PRODUCE ORGANIC ACIDS

(57) Abstract: This invention relates to the metabolic evolution of a microbial organism previously optimized for producing an organic acid in commercially significant quantities under fermentative conditions using a hexose sugar as sole source of carbon in a minimal mineral medium. As a result of this metabolic evolution, the microbial organism acquires the ability to use pentose sugars derived from cellulosic materials for its growth while retaining the original growth kinetics, the rate of organic acid production and the ability to use hexose sugars as a source of carbon. This invention also discloses the genetic change in the microorganism that confers the ability to use both the hexose and pentose sugars simultaneously in the production of commercially significant quantities of organic acids.



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