# Ginkgo Bioworks and Genomatica Forge Alliance to Accelerate Commercialization of More Sustainable High-Volume Chemicals

*Delivers the full package to chemical producers to cost-effectively make many mainstream chemicals*

**Boston, MA and San Diego, CA, September 29, 2016 –** Ginkgo Bioworks and Genomatica announced an alliance to more rapidly deliver biology-based solutions for the world's highest-volume intermediate and specialty chemicals. Mainstream chemical producers can now in-license technology to manufacture their widely-used chemicals with cost-effective and sustainable whole-process solutions that include engineered microorganisms, complete process designs and technology transfer support. The alliance is structured as a deep collaboration, with two-way sharing of technology and intellectual property, along with joint technology development, to provide a single unified offering to the market.

The alliance aims to accelerate the transition of the mainstream chemical industry to biological process technology. Bio-based production of intermediate chemicals can deliver better overall economics and greater sustainability and performance by harnessing the power of biotechnology and microorganism engineering to grow products. Only a few dozen chemicals at the heart of the mainstream industry, with markets up to millions of tons and many billions of dollars each, are used to make the thousands of everyday products that fill our homes, stores and offices. Bringing together a full stack of best-in-class capabilities with clear industry leadership, the alliance provides a compelling new reason for mainstream chemical firms to explore and adopt these new biological technologies.

"This alliance should be a welcome and familiar approach to anyone in the chemical industry," said Carlos A. Cabrera, Executive Chairman, Genomatica, and the former Chairman, President and CEO of UOP LLC (now a Honeywell company). "The potential of biology to impact our industry is substantial and rapidly evolving. Genomatica and Ginkgo now make it practical and feasible for existing and new industry participants to access, license, and deploy cost effective and innovative biotechnology."

Genomatica has already proven the ability to develop and transfer to the industry new process technologies that work at high-volume commercial plants. Today, Novamont, a Genomatica-licensee, announced the grand opening of the world's first commercial plant for bio-production of a major intermediate chemical. Novamont's $100M plant, built in Bottrighe, Italy, will produce 30,000 tons per year of the chemical 1,4-butanediol powered by Genomatica's process technology.

Also, today Ginkgo announced the launch of their next generation foundry, Bioworks2. With twice the size and at least 6X expected increase in capacity, Bioworks2 represents a step change in what is possible for organism design. "Ginkgo's foundries bring tremendous capability to accelerate organism engineering and complement our strengths in whole-process design, computation, and manufacturing scale-up," said Christophe Schilling, CEO of Genomatica. "We're delighted to share technology that

enhances their foundry capabilities and enhances our ability to drive process technology innovations into the chemical mainstream. Together, we can accelerate the transition to more sustainable, high-volume everyday products."

"The combination of our technologies will allow us to more rapidly extend the benefits of biotech into many high-volume markets," said Jason Kelly, CEO, Ginkgo Bioworks. "Genomatica is the perfect ally to help bring the power of our foundries to mainstream chemical markets. Genomatica is proven at high-yield bio-based processes, which is essential for widespread deployment of cost-effective technology to produce major-market chemicals."

**About Ginkgo Bioworks**

Headquartered in Boston, Ginkgo Bioworks uses the most advanced technology on the planet— biology — to grow products instead of manufacture them. The company's technology platform is bringing biotechnology into consumer goods markets—enabling fragrance, cosmetic, nutrition, and food companies to make better products. For more information, visit www.ginkgobioworks.com.

**About Genomatica**

Genomatica is a widely-recognized leader in bioengineering. It develops biobased process technologies and helps customers develop solutions that enable a "better way" to produce chemicals, from alternative feedstocks, with better economics, sustainability and performance. Genomatica is distinctive in its total-solutions approach, supported by its bioengineering platform, which intimately intertwines and co-optimizes microorganism design, bioprocess design and economics.

Genomatica has earned widespread acclaim for its technology and commercialization achievements. Awards include the Kirkpatrick Award, for "the most noteworthy chemical engineering technology commercialized in the world," and the 2015 World Economic Forum Technology Pioneer award. To learn more, see www.genomatica.com.

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