

News Release

Your Contact

Karen Tiano +1 978 715 1478

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Merck KGaA, Darmstadt, Germany, Joins DiViNe Consortium to Address Low Yields, High Costs of Vaccine Purification Processes

- **Five year project will create more cost effective purification program**
- **Company to provide chromatographic expertise**

Darmstadt, Germany, September 14, 2016 – Merck KGaA, Darmstadt, Germany, a leading science and technology company, has joined the [DiViNe project](#), a European consortium of six companies to address the biggest challenges facing the development, manufacture and delivery of vaccines.

The objective of the DiViNe project is to create an integrated, cost-effective purification program specifically tailored for vaccines that achieves higher yields while preserving product integrity. Merck KGaA, Darmstadt, Germany's specific focus will be on simplifying the process of vaccine purification that typically relies on affinity chromatography, a method of capturing antibodies. In support of this goal, the company will be providing chromatographic materials and coupling technologies.

"Purification steps represent significant manufacturing costs for most biological drugs," said Udit Batra, CEO of the [life science business](#) at Merck KGaA, Darmstadt, Germany. "In targeting these inefficiencies we have an excellent opportunity to drastically improve rates of recovery. As an industry leader in chromatography, we



News Release

look forward to contributing our expertise to the DiViNe consortium, helping to identify process efficiencies and supporting expanded access to affordable vaccines.”

The DiViNe project’s integrated purification platform will first be tested with diverse, heterogeneous vaccines including glycoconjugates, protein antigens and viruses. Once validated with vaccines, the consortium plans to implement its purification platform in downstream processes for other biologics, including recombinant proteins, gene therapy vectors and blood products.

Merck KGaA, Darmstadt, Germany will be joined in the consortium by Affillogic (France), Aquaporin (Denmark), GenIbet Biopharmaceuticals (Portugal) and GlaxoSmithKline (Italy). The project will be coordinated by iBET (Portugal) and has received funding from the European Union’s Horizon 2020 research and innovation program under grant agreement N° 635770.

The DiViNe project is part of the company’s larger vaccine initiative focusing on the biggest challenges around vaccines: costs, speed, accessibility and delivery. The company has recently engaged with multiple global partners to support faster and more cost-effective development of new vaccines needed to fight diseases like Ebola, Zika and influenza. Other projects – such as DiViNe – aim to simplify manufacturing processes, making them more amenable to technology transfer to developing countries. Together, these vaccines initiatives will help expand access to high-quality healthcare, especially in low- and middle-income countries.

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About the Life Science Business of Merck KGaA, Darmstadt, Germany

News Release

The life science business of Merck KGaA, Darmstadt, Germany, which operates as MilliporeSigma in the U.S. and Canada, has 19,000 employees and 65 manufacturing sites worldwide, with a portfolio of more than 300,000 products enabling scientific discovery. Udit Batra is the global chief executive officer of MilliporeSigma.

Merck KGaA, Darmstadt, Germany completed its \$17 billion acquisition of Sigma-Aldrich in November 2015, creating a leader in the \$125 billion global life science industry.

Merck KGaA of Darmstadt, Germany is a leading company for innovative and top-quality high-tech products in healthcare, life science and performance materials. The company has six businesses – Biopharmaceuticals, Consumer Health, Allergopharma, Biosimilars, Life Science and Performance Materials – and generated sales of € 12.85 billion in 2015. Around 50,000 employees work in 66 countries to improve the quality of life for patients, to foster the success of customers and to help meet global challenges.

Merck KGaA, Darmstadt, Germany is the world's oldest pharmaceutical and chemical company – since 1668, the company has stood for innovation, business success and responsible entrepreneurship. Holding an approximately 70 percent interest, the founding family remains the majority owner of the company to this day. Merck KGaA, Darmstadt, Germany holds the global rights to the name and the trademark "Merck" internationally except for the United States and Canada, where the company operates as EMD Serono, MilliporeSigma and EMD Performance Materials.