Chemical Manufacturing Methods for the 21st Century Pharmaceutical Industries (Chem21)

consortiapedia.fastercures.org/consortia/chem21/

Research Areas

Tool Development

At a Glance

- Status: **Active Consortium**
- Year Launched: **2012**
- Initiating Organization: **Innovative Medicines Initiative**
- Initiator Type: **Government**
- Location: **Europe**

Abstract

Chemical Manufacturing Methods for the 21st Century Pharmaceutical Industries (Chem21) is a project of the European Union's Innovative Medicines Initiative (IMI) and is a collaborative effort to examine ways to make chemical research and the pharmaceutical industry more sustainable and environmentally friendly. The project has studied the industry and has identified needs and barriers and is now working to develop methods to navigate around them to reduce costs for companies and thus prices for patients. Chem21 also involves an educational training component that will help instill the project's results in the next wave of scientists.

Mission

Chem21 seeks to develop practices that will allow the pharmaceutical industry's drug development process to become more environmentally friendly. The expectation is that these methods will reduce the amount of raw material that companies must use to produce a small amount of active ingredient. This improved efficiency should help pharmaceutical companies cut costs, which should lead to less expensive medicines for patients.

Consortium History

2012: Chem21's start date was Jan. 10, and the project officially got under way in October.
2014: Chem21 held its first Scientific Advisory Board meeting on May 15.

Structure & Governance

The Chem21 initiative is divided into six work projects (WPs), each with a particular focus. The goals of the work projects are to define and measure the IMI's Vision 2020 with an updated view of challenges to sustainable chemistry, develop new methods and approaches and compare and analyze them against existing approaches, and develop educational modules to ensure that the project's benefits are implemented and practiced among the next generation of scientists.

WP 1 was tasked with identifying the challenges that the European Union pharmaceutical industry will face in 2020. The work project convened workshops to solicit input from industry members. Its findings included the importance of understanding the industry needs and barriers that caused prior sustainable chemistry efforts to fail, as well as of developing metrics, training, and education from the results.

WPs 2, 3, and 4 will build on WP 1 to develop new practices to help meet industry needs. WP 2 focuses on developing sustainable chemical catalysts and processes, while WP 4 focuses on transforming simple carbon sources into high-value products by microorganisms through the creation of efficient biosynthetic pathways.

WP 5 will translate the results of WPs 2, 3, and 4 into training and educational material, aiming to influence and educate the next generation of scientists about low environmental impact chemistry. It will also develop an inward-facing metric to situate green chemistry principles within the consortium and evaluate the consortium's environmental impact.

WP 6 oversees the project and is responsible for project management and reporting. GlaxoSmithKline leads the project's work package and assures implementation, along with co-coordinator Sanofi Chimie and managing entity UNIMAN.

Financing

Chem21 will be a four-year, €26.4 million (US$35.9 million) project financed by IMI and the European Federation of Pharmaceutical Industries and Associations (EFPIA). EFPIA's in-kind contribution of €13.6 million represents the largest contribution to the project, while IMI added €9.8 million and other funding sources added €3 million.

Intellectual Property

All IMI projects, such as Chem21, operate under the same umbrella intellectual property (IP) policy. Any IP discovered as a result of work in the collaboration is owned by the participating institution that made the discovery (or if the discovery was made jointly, there is joint ownership). Other participants have access rights to the generated IP during and after the project for research use, and participant owners have the right to license their IP and associated obligations to other parties, including to affiliated entities. Third parties may request access rights, which do not involve the ability to sublicense without receiving authorization from the IP-owning participant.

Data Sharing

In keeping with IMI policy, the Chem21 project has up to one year after completion to disseminate IP or data created by the project.

Impact/Accomplishment

To date, WP 1 has published three presentations, and WP 5 has published one presentation.

Links/Social Media Feed

Homepage	http://www.chem21.eu/
Other social media	http://www.chem21.eu/category/blog/
Other website	http://www.imi.europa.eu/content/chem21

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