



Press Release

TWB and PILI partners for the production of bio-based and ecological dyes

Toulouse, 12 July 2016 - Toulouse White Biotechnology (TWB), pre-industrial demonstrator, and PILI, company specialised in the bioproduction of renewable and ecological dyes, have started a collaboration. The aim is to reach the pilot scale of the industrial manufacturing process for a first dye. PILI chose to move into TWB's premises in order to benefit from its structures, equipment, and skills. The dyes produced by PILI are intended for the textile, ink, and cosmetic industry, as an alternative to compounds of fossil or agro-industrial origin which have a very negative impact on the environment. PILI plans to produce on a large scale and to market its first dye (blue) within the next 3 years.

PILI is a biotechnology company which aims at developing processes for the biological production of renewable and biodegradable dyes, offering an alternative to the polluting dyes currently used especially in the textile, ink, and cosmetic industry.

This research project, which stems from La Paillasse - first French community biotechnology laboratory - aims to **outgrow petrochemistry and agro-industry for producing the dyes**. It involves using the natural capability of some microorganisms (such as soil bacteria or fungi) to produce pigments from renewable resources, and optimising the production.

After a proof of concept obtained in 2013 and the creation of the PILI company in 2015, the next stage is the move to the pre-industrial pilot scale (300 litre bioreactor) of the production process for a blue dye. PILI is today negotiating with several industrial partners in the ink, textile (world market of more than 2 million tonnes representing 5.5 billion euros) and cosmetic fields.

Thomas Landrain, CEO of PILI, says: « *The move to the pre-industrial stage was feasible only in association with specialised partners. We prospected in France and in Europe; the only structure that could meet all our needs was TWB, which has no equivalent in France or in Europe. TWB provides us with premises and unique technical platforms, with the scientific and industrial excellence of its teams, and embeds us in a rich ecosystem, expert in synthetic biology, fermentation, and analytical chemistry.* »

Within the partnership framework, the PILI researchers work full-time with complete confidentiality in a dedicated space. **TWB provides PILI with all the elements necessary for its development and for the upscaling of its process** by putting at its disposal the laboratories, equipment, and expertise of all its teams as well as those of the LISBP (Laboratoire d'Ingénierie des Systèmes Biologiques et des Procédés) and CRITT-Bioindustries in the fields of fermentation, optimisation of processes and bacterial strains, as well as production scale-up.

Pierre Monsan, Founding Director of TWB: « *This new partnership once again shows how TWB is able to adapt to the needs of its partners by offering, with confidence, tailor-made solutions, whether it is a large*

group, a very small company, or an academic team. Whatever the origin of the project, our objective remains the same: to accelerate the move of scientific projects to the industrial stage. »

Thanks to this partnership formula, TWB offers start-ups such as PILI an infrastructure that can support the first industrial feasibility tests that subsequently enable them to choose and invest in the equipment of their own production apparatus.

About TWB:

Toulouse White Biotechnology (TWB) is a preindustrial demonstrator whose goal is to speed up the development of industrial biotechnologies by facilitating exchanges between public research and industry. Its vocation is to contribute to the expansion of a bioeconomy based on the use of renewable carbon in various fields (chemistry-biochemistry, materials, energy, etc.). Various kinds of collaborative research and development projects are proposed, as well as personalized services for businesses.

In March 2011, TWA was awarded the call for project for the Investments for the Future Program (PIA – Programme Investissements d’Avenir). It receives State aid through the ANR (Agence Nationale de la Recherche - National Research Agency). TWB is a UMS (Unité Mixte de Service – Mixed Service Unit) managed by INRA under triple INRA/INSA/CNRS tutelage.

The €18 million Euros of industrial contracts signed in four years of activity reinforces the relevance of TWBs operation and its leading role as an interface in public/private transfers.

More about TWB: www.toulouse-white-biotechnology.com/

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About PILI:

PILI develops natural competitive dyes without petrochemistry or pesticide. Thanks to the capability of microorganisms to effectively transform renewable carbon (various sugars or vegetable waste for instance) through fermentation processes, PILI offers industrial players a sustainable and competitive alternative to the use of synthetic dyes, which are polluting to produce and harmful to the environment. Through its design activity, PILI also explores the possible avenues offered by emerging eco-materials in order to propose innovative and ecological supports for the colour as well as a user experience immersed in biological processes and questions that they raise.

Created in 2015, laureate of the Global Innovation Competition 2030 - Seed phase in July 2016, PILI now has 6 persons in its team with complementary skills: microbiology, fermentation, synthetic biology, molecular chemistry, design, and business development. PILI is currently seeking two million euros to market its first products within the next three years.

Further information: <http://www.pili.bio/>

PILI contacts:

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