Projet SUSTAINS

ACRONYME	**SUSTAINS**		
INTITULE COMPLET	**Sustainable Use of phytoSTilbenes AgaInst Non-alcoholic Steatohepatitis**		
DUREE **DATES DEBUT/FIN**	1 an 01/01/2026 - 31/12/2026		
APPEL A PROJET	EXEBIO Excellence call 2025 - Interdisciplinaire		
FINANCEURS	EXEBIO		
BUDGET TOTAL	47 569 €		
PORTEUR(S) OFFICIEL(S) DU PROJET	Dr ROMIER Béatrice		
ROLE RIBP	Partenaire	**PORTEUR POUR RIBP**	Dr COUROT Eric
PERSONNELS DU LABO IMPLIQUES	COUROT Eric, LECLERE Vincent		
PARTENAIRES	Extracellular Matrix and Cellular Dynamics Unit (MEDyC) URD ABI - AgroParisTech		
OBJECTIFS DU PROJET	Among the family of phenolic compounds, phytostilbenes (resveratrol and derivatives), represent a huge market in plant-based therapies due to their properties that contribute to the prevention of age-related chronic diseases, particularly metabolic and cardiovascular. Their current availability from grape products is not sustainable due to vine cultivation processes (pesticides), transport, storage, crushing and solvent extraction; their stability and bioavailability also remain a problem. Grape bioactives metabolites can be extracted using environmentally safe and sustainable processes, which are in line with the rising demand or eco-friendly and healthful products worldwide. These methods are perfectly suited to the changing needs of both customers and industries since they lessen environmental effect, enhance product quality, and offer financial advantages. To address this request, the objective of this project is to propose an innovative therapeutic solution incorporating stilbenes obtained through sustainable and green processes in the fight against lifestyle-related diseases such as obesity or Metabolic dysfunction-Associated SteatoHepatitis (MASH). MASH poses a significant challenge to global health due to its strong correlation with obesity, diabetes, and cardiovascular diseases. Current treatments, including lifestyle changes and therapies targeting inflammation and fibrosis, exhibit limited effectiveness. The current project aims to propose an innovative therapeutic option combining new antioxidant phytostilbenes derived from resveratrol with an autophagy modulator (synthetic peptide),currently in phase 3 clinical trials for lupus. This dual treatment will have a synergistic effect to prevent liver fibrosis production, thereby limiting the occurrence of complications such as cirrhosis or hepatocellular carcinoma. The treatment		

	will undergo testing using an innovative murine model that faithfully mimics the natural progression of MASH, with a perspective for clinical application. The SUSTAINS project associates 3 partners gathering their skills in plant cell factories (RIBP), research in green chemistry (URD ABI) and understanding progression of metabolic diseases (MEDyC). It is builds on the pioneer work of those three laboratories on the study of resveratrol and its derivatives through grapevine cell cultures for more than 12 years (bioproduction of g/L for resveratrol and dimers, biosynthesis study, lab bioreactor, purification) and the application of its products in the fields of cosmetics and cancer. The SUSTAINS project develop interdisciplinary research between three laboratories present in the EXEBIOconsortium from different disciplines to respond to major societal and scientific challenges represents a promising initiative with an innovative approach to address the complexities of MASH, offering potential breakthroughs in therapeutic interventions.
MOT-CLES	Phytostilbenes, resveratrol, sustainable processes, bioproduction, grapevine cell cultures, MASH (Metabolic dysfunction-Associated SteatoHepatitis), autophagy modulator, green chemistry