Exploratory Landscape

Novel, sustainable technologies to derive natural alcohols

Client overview

An established company was seeking alternative / sustainable technologies to derive natural alcohols of varying chain lengths. Fatty alcohols are used in skin lotions / creams and hair products to smooth / thicken the formulation, or stabilize foams. Commercial production of fatty alcohols is predominantly achieved either through chemical conversion of fatty acids derived from oil crops, such a palm oil (natural fatty alcohols), or via synthesis from petrochemical feedstock (synthetic). *De novo* fatty alcohol biosynthesis from sustainable feedstocks or CO_2 is also possible using engineered strains of bacteria (such as Cyanobacteria), yeast or algae. They generate fatty acyl-ACP, fatty acyl-CoA or free fatty acids which can subsequently act as substrates for fatty alcohol production.

The search

SAL initiated a technology search to identify companies actively developing alternative technologies for fatty acid / alcohol production. Due to the pressing nature of this work, companies were primarily identified through secondary research and SAL's network. Companies were evaluated by SAL based on a number of criteria including:

(1) their ability to produce fatty acids or alcohols of the desired chain length
(2) the technology readiness level (TRL)
(3) the potential for scale up of manufacturing to meet the client's projected requirements

To meet internal deadlines, all findings were delivered within 4 weeks. Additional insights on the market, factors impacting commercialisation of these products and competitor activity were also included in the final report.

"That was fast and good work... we would be keen to conduct similar work with SAL in the future"

Outcome

20 companies with relevant technology / products were identified by SAL and presented to the client for further evaluation

4 of the 20 opportunities were flagged as being of particular interest as they produced compounds with the desired chemistry and had viable plans for scaling up production