

## **Integrated system for the separation of sophorolipid and other glycolipids in fermentation**

### **BACKGROUND**

The production of high value glycolipids is often carried out by fed batch fermentation. Such glycolipids have many useful properties and uses in many application areas including cleaning products, cosmetics and environmental bioremediation, having recently been commercialised in a number of applications. Current fermentation methods to obtain glycolipids are inefficient as the fermentation must be stopped when product concentrations reach a certain value, often due to the viscous nature of the product limiting oxygen transfer. This results in reduced overall productivity and means there is increased fermenter downtime, cleaning requirements and substrate consumption, with a higher proportion of substrate being used for cell growth rather than glycolipid formation.

For sophorolipids in particular there are high agitation requirements due to the product viscosity, and much of the fermenter volume cannot initially be utilised due to additional volume requirements for substrate feeding.

### **THE TECHNOLOGY**

This separation technology offers improvements to current methods for the production of high value glycolipids by extended fed batch fermentation, through the application of a novel integrated separation of the glycolipid product.

The technology can increase fermentation productivity by up to 30%, decrease agitation requirements by up to 40%, increase product yield on substrate and decrease fermenter downtime and cleaning requirements. This has the potential to significantly improve process economics.

### **KEY BENEFITS**

- Low energy, low cost method to separate glycolipids from fermentation broth.
- Up to 30% productivity increase.
- Up to 40% agitation power requirement decrease, resulting in reduced energy costs.
- Increased product yield.
- Reduced downtime and cleaning requirements.
- Effectiveness has been demonstrated with sophorolipid fermentations.

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## APPLICATIONS

The technology could be used to develop semi continuous processes for the production and recovery of glycolipids including sophorolipids, rhamnolipids and mannosylerythritol lipids (MELs) for high value applications such as:

- Biodegradable surfactants including “green” cleaning products.
- Pharmaceutical, medical and personal care products.
- Bioremediation for heavy metals and oil contamination.
- Enhanced oil recovery.

## INTELLECTUAL PROPERTY

Patent Filed

## OPPORTUNITY

The IP is offered for royalty bearing assignment under our standard terms

## CONTACT

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