

# METHOD FOR THE PRODUCTION OF EXOPOLYSACCHARIDES FROM TRYPANOSOMATID PROTOZOA

A new method for the use of trypanosomatid protozoa in the production of soluble exopolysaccharides is described. These exopolysaccharides can be used in industries such as pharmaceuticals, food, biomedicine and the environment.

## Technology for Licensing

### Keywords:

Extracellular polymeric substances, EPS, protozoa, Exopolysaccharides, biotechnology, biorremediation, food industry, cosmetic industry, pharmaceutical industry, trypanosomatids

### Description:

Extracellular Polymeric Substances (EPSs) are the compounds responsible for the structural and functional integrity of biofilms and are secreted by bacteria, algae, fungi and yeasts. Their applications cover sectors such as the food industry (generation of flocculants, thickeners or emulsifiers); the pharmaceutical industry (drug carriers, development of bioactive products); or the environmental industry (water treatment), however, production rates are low and extraction and purification procedures are complex.

The secretion and industrial development of EPSs from trypanosomatid protozoa has not been described so far, representing a great opportunity for the production of biotechnological products. These parasites can be isolated from insects and cultured in any type of culture platform (roux flasks, flasks or bioreactors).

The method of EPS isolation is a simple, fast and high-yielding process that only requires biosafety level 1 (BSL-1) because of they are non-human pathogenic organisms. Moreover, the culture and duplication times of trypanosomatid protozoa are among the fastest in eukaryotic organisms.

Taking all of the above into account, the use of protozoa as EPS-producing organisms represents a new and innovative source for obtaining these compounds with a high potential to be exploited at an industrial level.

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## Advantages and Benefits

### » Simple and scalable method

The culture of these parasites can be done in any type of culture platform (roux flasks, flasks or bioreactors).

### » Fast and cost-effective procedure

### » Biosafety

Monoxen cycle trypanosomatid organisms are not pathogenic to humans and are categorised as biosafety level 1 (BSL-1) organisms.

### » High performance

Extraction range of 1g/L, one of the highest on the market and particularly within eukaryotic organisms.

### » New applications

Potential for multiple applications in food, pharmaceutical, biomedical and environmental industries due to their wide diversity of structures, composition and biophysical properties.

### Patent status:

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