

BIOSOLENS

SELECTIVE LYSIS OF LIVING CELLS SEPARATING BAD LIFE FROM GOOD LIFE



Market Need and Potential

The kingdom of mold, fungi and yeast differs from human and animal kingdom in its building block of the cell wall. This feature is used in an invention named Biosolens YLC. It can be used, for instance, in in vitro diagnostics where it can be employed in the case where a selective, quantitative lysis of yeast cells is desired and where all other cell types including present bacteria are left unaffected. It can be combined with Biosolens BLR that convert life biomarkers into light and enables quantifications of the amount of present living yeast cells in the sample.

Yeast in the surrounding can cause irritation in the respiratory organs causing illness. More dramatic is sepsis in immunosuppressed cancer patients. Fast, specific and accurate quantification of present yeast cells in blood is critical for correct diagnostics, medication and survival. Biosolens YLC and YeastAlert meet a need from the laboratory diagnostics market worldwide – Selective Life Detection!

Business Idea

Biosolens AB have developed YeastAlert as a response from a call from Clinical Microbiology Laboratories. Here there is a need for a more quantitative, faster and specific test for rapid Yeast detection/diagnostics.

Biosolens AB has unique knowledge in the pharmaceutical screening field paired with past successful cell lysis competence from Tromsø Norway. Biosolens AB have exclusive right worldwide to produce reagents for a patented wine monitoring technology called BrettAlert. It can be used to detect presence of contaminating and potentially devastating wine spoilage yeast in wine barrels during storage. All this combined give the YeastAlert and Biosolens YLC a technical and experimental support needed to bring the innovations further towards IP protection as a first goal.

Competition

- Plating. > 10 days, Colony detection only.
- Microscopy. High risk of antibody non-yeast binding resulting in false positives.

- Metabolic trace. Enzymatic trace of beta-galactosaminidase using fluorescent substrate. Detects trace of life if present. Does not say anything of how many living cells there are in the sample. Non-quantitative and sensitive to inhibition.
- Mass spectrometry. Fast and Sensitive. Non-quantitative.
- High risk of false negative, 50% of true positive sample undetected using any of the above techniques.

Advantages

Biosolens YLC and YeastAlert is the best option for the existing need because:

- Biosolens YLC does only kill/destroy yeast cells leaving others unaffected.
- Only living cells are targeted.
- No hazardous chemicals used.
- Fast (<30 min)
- Flexible kit compatible with common automation solution in use in diagnostic laboratories (Beckman Coulter, Hamilton Robotics).
- Biosolens YLC is compatible to be used with Biosolens BLR as well as other biomarker detection kits available on the market.
- An additional feature is that Biosolens YLC can be used to any applications involving yeast cells and post lysis any other detection/kit can be employed.
- Low detection limit (150 cells per mL)

Current status

YeastAlert and Biosolens YLC have received funding from Umeå University and Västerbottens Läns Landsting Innovation+ to establish Proof of Concept in collaboration with researchers belong to the Faculty of Medicin, Norrlands University Hospital and Huddinge University Hospital. IP protection is ongoing with partner AWA Patent AB. Biosolens AB have reagents in stock for sale.



COMPANY PROFILE

Contact

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IPR

Initiated a process involving Umenova Innovations AB and partner AWA Patent AB.

Capital need

650 000 SEK for 2019 (business plan with milestones and budget in place)

Partnership

Biosolens AB seek funding and investment from private and institutional investors, and are also interested in strategic partnerships.

Team / Scientific advisors

Jonas Eriksson
Ph D, Founder and CEO.

Constantin Urban
Assistant Professor, Clinical Microbiology, Umeå University.

Management / Board

Robin Felder
PhD, Professor in Medical Automation and Technology, Virginia School of Medicine, Charlottesville, USA.

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Photos by Christoffer Öberg