



Multi-Channel Bioreactor

RTS-8 Plus



NON INVASIVE REAL-TIME MONITORING AND CULTIVATION OF MICROORGANISMS



RTS-8 Plus is a multi-channel bioreactor that provides high-density data across multiple conditions, helping to identify oxygen limitation, growth-phase shifts, and condition-to-condition differences before scale-up.

Unique Reverse-Spin® technology: tube rotation with periodic direction change provides highly efficient mixing and oxygenation.

Run up to eight 50 mL single-use bioreactor tubes in parallel and monitor OD (OD₆₀₀ equivalent), pH, and dissolved O₂ continuously in real-time.



Key benefits:

- Parallel, comparable experiments: media, strain, inducer, feeding strategy, or additive screening in one run;
- Strong aeration potential from Reverse-Spin® mixing (kLa up to ~450 h⁻¹ reported, depending on conditions);
- No external probes: closed, single-use tubes reduce setup time and contamination risk;
- Real-time insight: track lag/exponential/stationary phases, detect oxygen limitation, and quantify growth kinetics;
- Evidence-ready datasets: continuous logging supports DoE, tech transfer documentation, and internal decision making.



Successfully cultivated in RTS:



Recombinant Protein and Enzyme Production

- Escherichia coli
- Bacillus subtilis
- Pichia pastoris (Komagataella phaffii)
- Saccharomyces cerevisiae



Probiotic / Fermentation Bacteria

- Lactiplantibacillus plantarum
- Lactobacillus spp.
- Pediococcus spp.
- Lactococcus lactis
- Bifidobacterium bifidum
- Enterococcus faecium



Plant Pathogen, Crop Protection Research Models

- Ralstonia solanacearum
- Dickeya dianthicola
- Pectobacterium carotovorum/punjabense
- Fusarium oxysporum
- Botrytis cinerea
- Phytophthora infestans



Beneficial Organisms / Biofertilizers

- Chlorella sorokiniana
- Bacillus spp. (B. velezensis)



Medical Pathogens, Commensals

- Salmonella enterica
- Yersinia enterocolitica
- Staphylococcus spp.
- Acinetobacter baumannii
- Enterococcus faecalis
- Arcobacter spp.
- Aggregatimonas sangjini
- Aerococcus viridans
- Micrococcus luteus
- Kocuria spp.



Specialty Chemicals, Biopesticide Production

- Xanthomonas campestris
- Yarrowia lipolytica (Yeast)
- Cyberlindnera jadinii (Candida utilis)
- Photorhabdus laumondii



Pathogenic Fungi Fungal Models

- Cryptococcus neoformans
- Candida albicans



Food Production

- Brevibacterium linens
- Saccharomyces cerevisiae

Model Organisms for Pathogen Research

- Mycobacterium smegmatis

Applications:



Microbial strain screening and selection (bacteria, yeast);



Media optimization and process parameter scouting;



Bioproduction early screening (enzymes, metabolites, recombinant proteins);



Fermentation R&D in food, probiotics and industrial biotechnology;



Synthetic biology characterization and robustness testing;



Applied microbiology and environmental biotechnology studies.



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Investigation of the effect of aeration on growth dynamics, respiratory rate and pH changes of the aerobic bacterium *E. coli* BL21 cultivated in RTS-8 Plus single-use bioreactor.
biosan.lv/rts-growth



Real-Time OD monitoring for growth-rate characterisation of evolved methylotrophic *E. coli*.
biosan.lv/rts3



Determination of the concentration of microorganisms in Real-Time.
biosan.lv/rts1



Improving Real-Time OD monitoring of *Lactobacillus reuteri* in RTS-1C.
biosan.lv/rts2



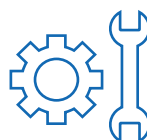
Reverse-Spin® Technology – Innovative principle of microbial cultivation.
biosan.lv/rts-tech



High quality customer service and fast support.



Partners in over 150 countries



Wide selection of spare parts for sustainable use.



Developed and manufactured in Latvia.



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