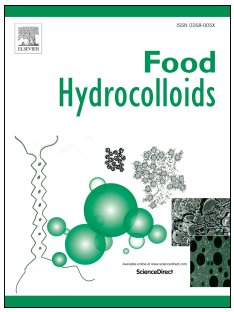
Accepted Manuscript



High-throughput screening approach to evaluate the adhesive properties of bacteria to milk biomolecules

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Biomolecule Immobilization

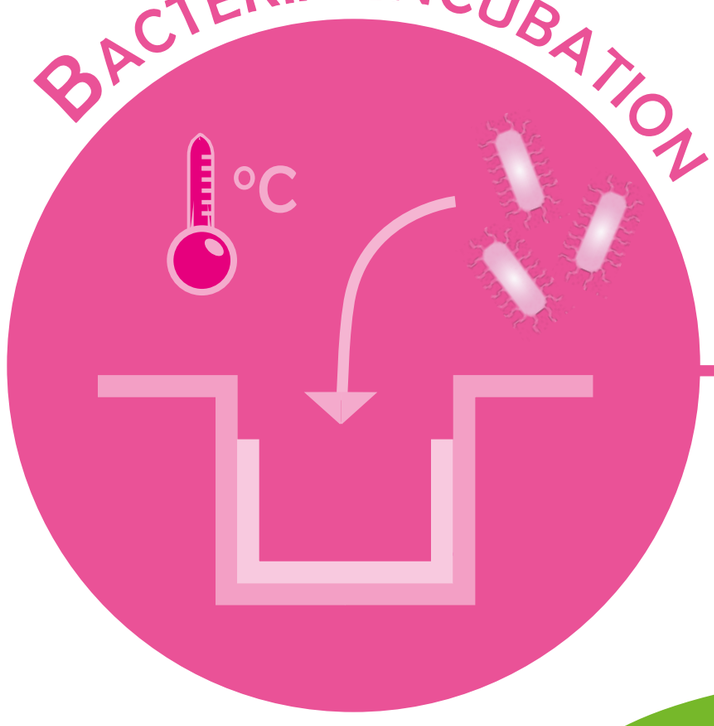
1

High-Binding Microplates
Coating parameters:
- 1 % (w/w) molecule solution
- 200 µL by well
- Stored at 9 °C overnight

Successive wash-outs

Remove unbound molecules + block empty sites

Bacteria Incubation



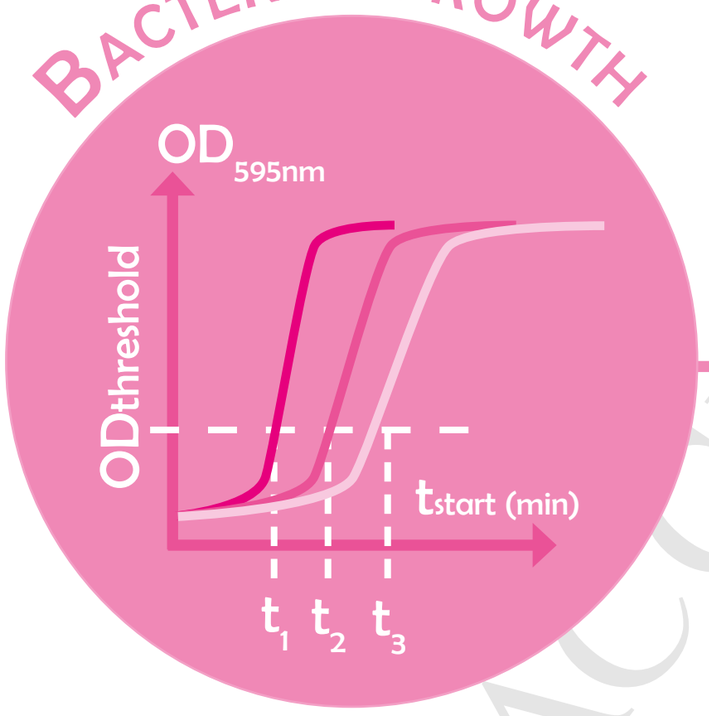
2

Bacteria-biomolecule affinity
Adhesion parameters :
- 120 µL of bacteria by well
- Incubation for 1 h
- At 37 °C for *Lactobacilli*

Successive wash-outs + culture medium

Remove unbound bacteria + allow bacteria growth

Bacteria Growth



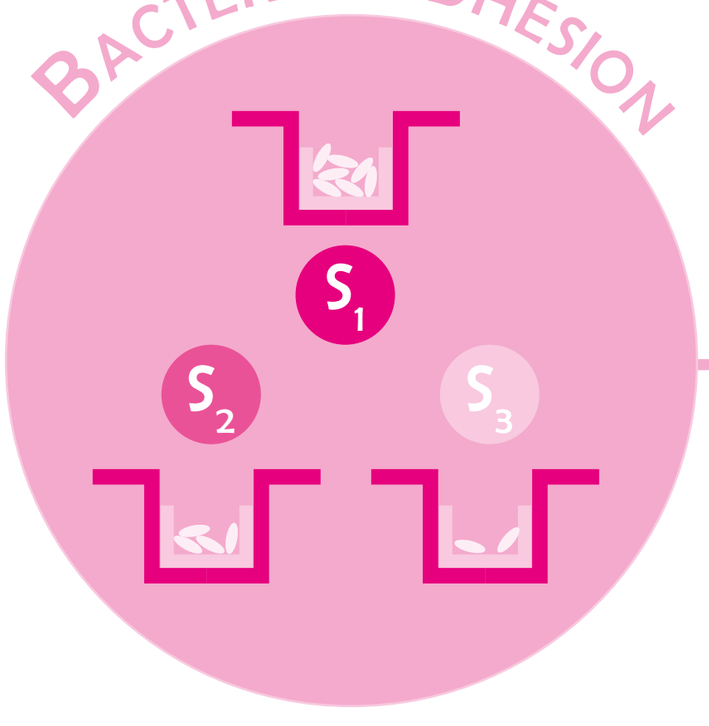
3

- Kinetics monitoring (24 h) through spectophotometry
- Quantity of bound bacteria = f(time at which growth starts)

Conclusion

Relationship between growth and adhesion

Bacteria Adhesion



4

Adhesive bacteria = high affinity for the biomolecule
- S_1 : highly-adhesive strain
- S_2 : adhesive strain
- S_3 : low-adhesive strain