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Evaluation of the efficiency of biocidal products for the oil and gas industry by using microscale cultivations

Henrique Moreira Simon
Maria Filomena de Andrade Rodrigues
Wellington Caio Silva
Alessandra Aparecida Pereira Rodrigues

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Instituto de Pesquisas Tecnológicas do Estado de São Paulo S/A - IPT
Av. Prof. Almeida Prado, 532 | Cidade Universitária ou
Caixa Postal 0141 | CEP 01064-970
São Paulo | SP | Brasil | CEP 05508-901
Tel 11 3767 4374/4000 | Fax 11 3767-4099

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Simon, H. M.; Rodrigues, M. F. A.; Silva, W. C.; Rodrigues, A. A. P.

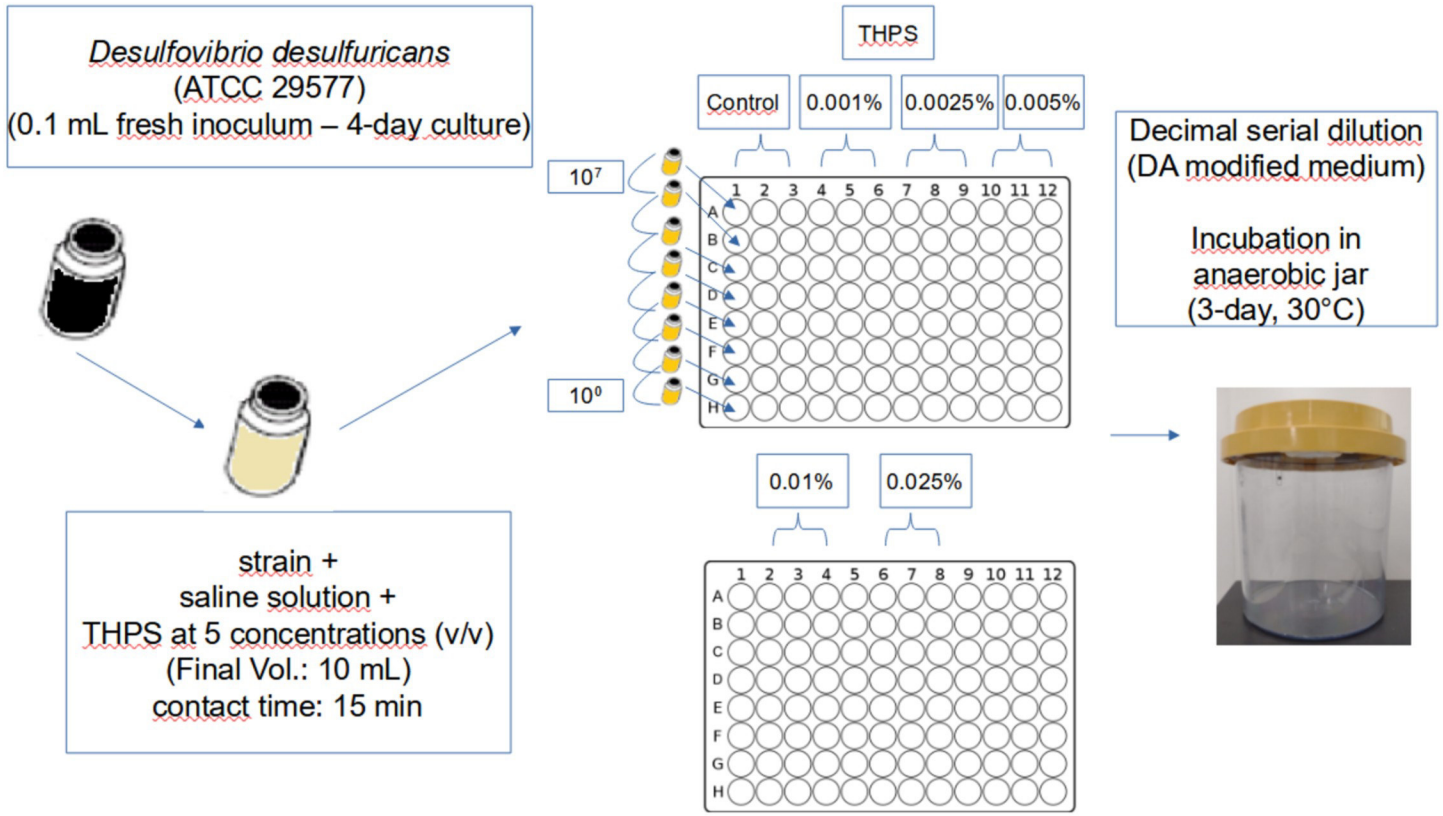
Introduction

- Microbiological routine monitoring of treatment with biocides (O & G industry)
  - Cultivation-dependent methods (quantification of inhibition for species such as SRB)
  - Long time of incubation (slow metabolism / reliable results using MPN method)
- *<u>Objective</u>: Microscale cultivation in anaerobic jar using alternative culture media for determination of Minimal Inhibitory Concentration (MIC)*

Methods

Minimal Inhibitory Concentration (MIC)

"DA Modified" Culture Medium	
Ingredients	**g/L**
Polypeptone	15.0
Peptone	7.5
Meat Extract	7.5
Yeast Extract	7.5
Ammonium Ferric Citrate, Green	0.75
L-Cysteine hydrochloride monohydrate	0.75
Agar	1.9



Conclusions

- DA modified medium satisfactory for growth of the reference strain (values greater than 10^8 MPN/mL).
- Minor decrease in most samples with biocide, compared to the control (1 log scale reduction);

Concentration of THPS	Recovery Cultivation obtained (3-day incubation) (MPN/mL)
0% (control)	$> 9.3 \times 10^8$
0.001%	9.3×10^7
0.0025%	9.3×10^7
0.005%	9.3×10^7
0.010%	$> 9.3 \times 10^8$
0.025%	9.6×10^7

- Difference of bacterial susceptibility between the concentrations not assessed;
- **Microscale method: attractive option**
- (saving of time / labor / material); further tests are planned

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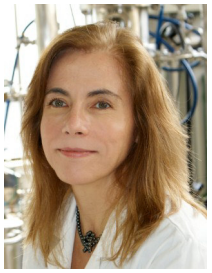
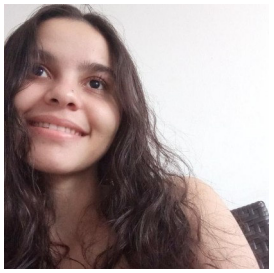
Greetings



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Contact:

hsimon@ipt.br
filomena@ipt.br