



Cellulose production of different *Spirogyra* and *Nannochloropsis* strains

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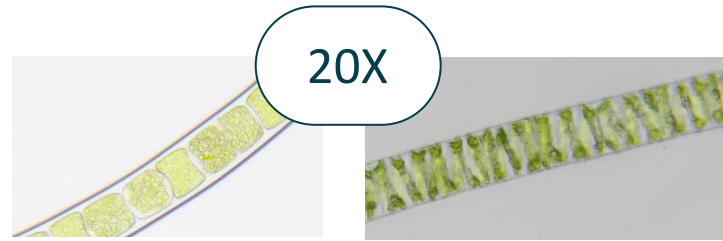
1 Biomass production

2 Protocol development

3 Cellulose content of the strains

4 Scaling-up

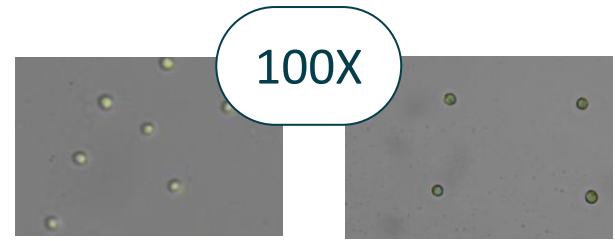
Spirogyra sp.



SAG 169.80

SAG 170.80

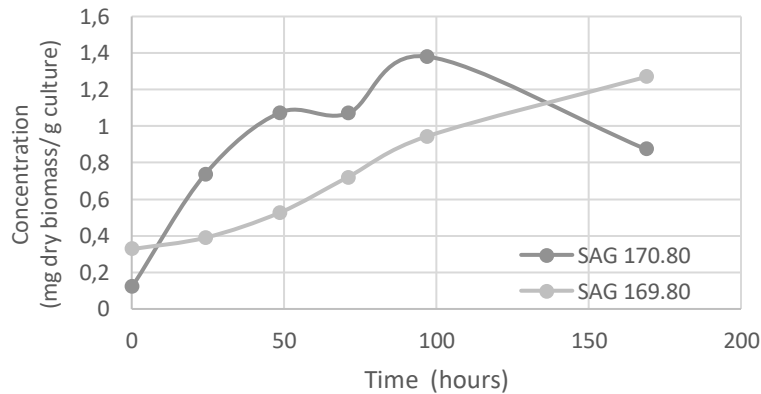
Nannochloropsis sp.



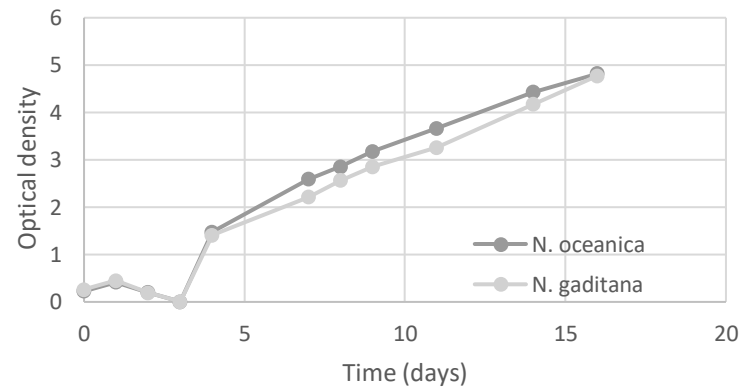
N. oceanica

N. gaditana

0.2080	0.6175	μ_{max}	0.346	0.2118
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BBM modified | 20 °C



f/2 marine | 25 °C



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Developed protocol

INITIAL DRY BIOMASS : 50 mg

TREATMENTS :

- Lipid extraction
- Alkali treatment
- Bleaching

Bligh & Dyer (without water addition)

2 % NaOH 2h at 80°C

30 % H₂O₂ 1.5 h at 80 °C twice

Lyophilised product →



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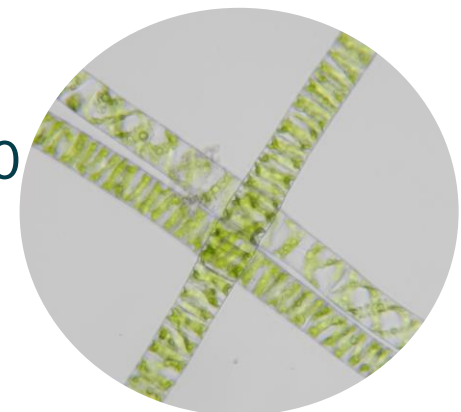
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Specie	% Cellulose	Cellulose productivity (mg/(L*d))
SAG 170.80	15.96%	50.42
SAG 169.80	7.69%	10.20
<i>N. oceanica</i>	4.56%	5.68
<i>N. gaditana</i>	3.05%	3.70

SAG 170.80



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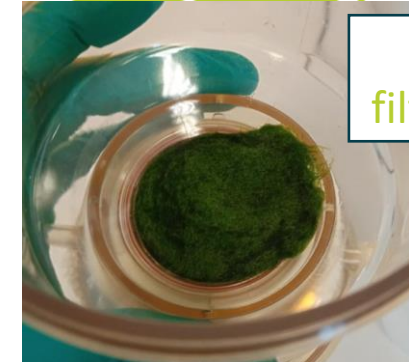
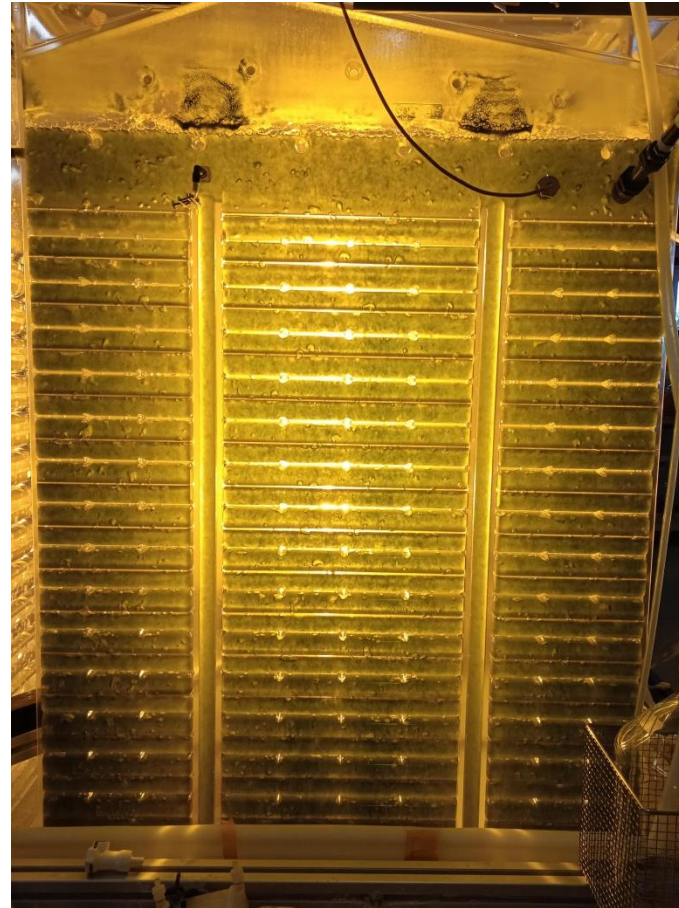
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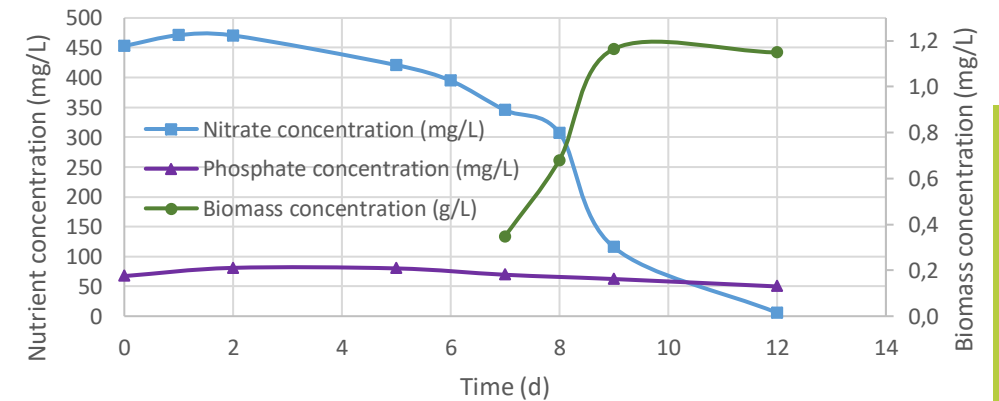
4 Scaling-up

SUBITEC FPA 25L

SAG 170.80



Easy filtration!



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THANK YOU



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