

Growth curves V.Natriegens, different NaCl concentrations.

Project: lab journal

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Growth Curves V. Natriegens.

📎 growth vnat.png

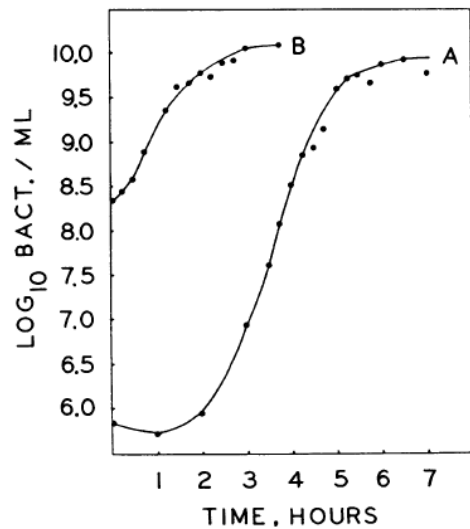
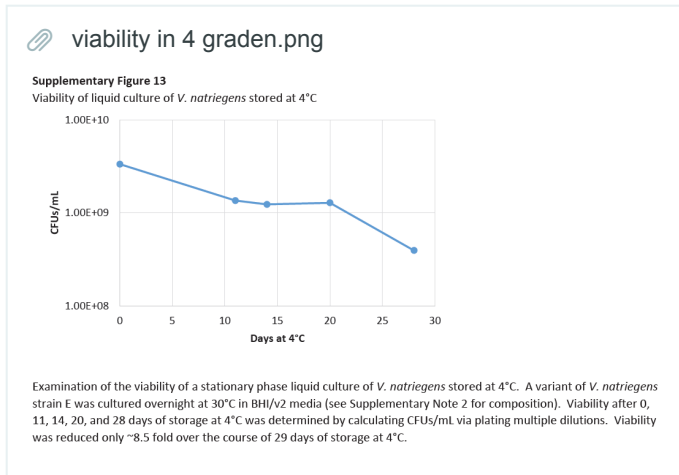


FIG. 1. Growth curve of *Pseudomonas natriegens*. Numbers of microorganisms were estimated by the plate count method. Curve A: two loopfuls of a stationary-phase culture were used as inoculum for 30 ml of brain heart infusion medium containing 1.5% sea salt in 500-ml Erlenmeyer flasks on a rotary shaker at 37 C. Curve B: 5 ml of a logarithmic-phase culture were used as inoculum for 50 ml of medium.



Key points from literature:

V. Natriegens have a lag-phase when inoculating .

Growth increases steadily until 37 degrees, when going higher growth slows down and stops at 42 degrees.

Vibrio natriegens_growthcurves on different media.docx

V. Natriegens, a marine bacterium with a generation time of less than 10 minutes..pdf

SO: rich media, like BHI media and media supplemented with ocean salts seem to give the best growth. However, to the best of my knowledge, nobody has figured out whether the amount of sodium ions in the concentration change the growth of this bacterium. HENCE the following experiment was designed:

Growth of V. Natriegens in culture supplemented with MgCL2 and KCl with different concentrations of NaCl.

MEDIUM PREPARATION:

Perform in triplicate , 7 different conditions, so 21 vials.

Recipe for media: L-Broth (0.5g NaCl/L), MgCl, KCl, NaCl variable, 25 mL. Concentrations and milligrams per 25mL are calculated and given in the excel file.

Salts in medium.xlsx

PROCEDURE:

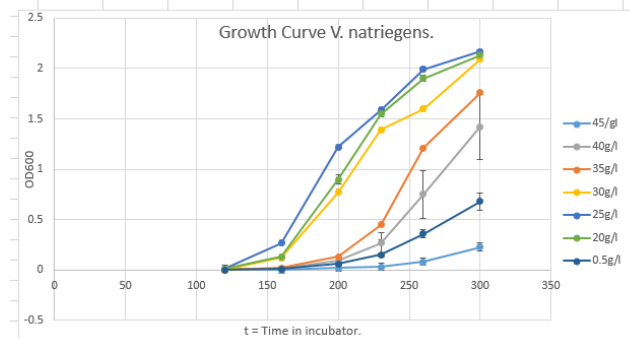
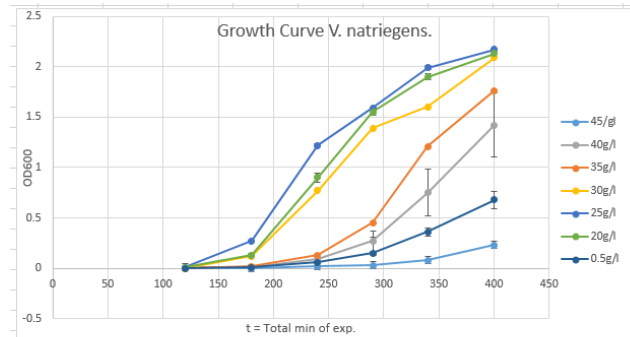
- Single colony was picked and resuspended in 250 µl LBV (30g/l salt)
- 10 µl of cell suspension was added to 25 ml growth media in an 100 ml shaking-flask
- Incubation at 200 rpm; 37°C
- OD600 and Time were measured.

Results:

SOME ERROR BARS MISSING IN THE GROWTH CURVE

[Results Growth Curve V Nat dif NaCl.xlsx](#)

[Growth Curves V.Nat in NaCL dep medium.png](#)



So, the best media is with 25 g/l NaCl supplemented with MgCl₂ and KCl

EXPERIMENT WITH BHI V2 NAACL high

SALTS IN MEDIUM:

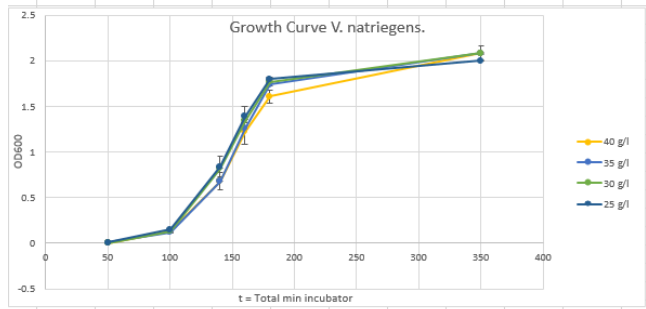
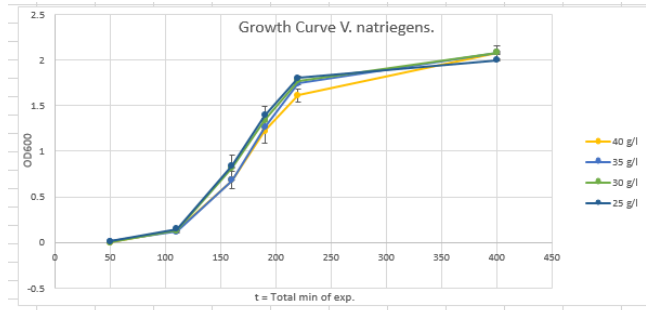
[Salts in medium.xlsx](#)

PROCEDURE:

- Single colony was picked and resuspended in 100 μ l LBV (30g/l salt)
- 10 μ l of cell suspension was added to 25 ml growth media in an 100 ml shaking-flask
- Incubation at 200 rpm; 37°C
- OD600 and Time were measured.

[BHI dif NaCl growth curve v natriegens.xlsx](#)

image.png



RESULTS COMBINED:

Results Growth Curve V Nat dif NaCl and BHI combined (artificially).xlsx