CFU determination E coli and V natriegens

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(Sander) As the relation between OD and cell concentration is dependent on the spec you use as well as on the cell you are working with, you have to run the experiments yourself (read OD for actively growing cells and plate dilutions for efficient counting). As a comparison, a rough estimate for E. coli is 10^9 cfu /mL /OD_{600nm} unit.

E. coli CFU determination:

Methods

a liquid broth was made of *E. Coli* and *V. Natriegens.* From time to time, 750 uL was taken to determine $OD_{600.}$, 100 uL was taken and a dilution series was made in MilliQ. 0.2 mL of the dilution series was then used to inoculate small agar plates. The fluid was spread out using a Drigalski Spatula.

Results

Cfu determination E.co.xlsx

Relationship: 1 x 10^9 x $OD/_{600nm}$ + 6 x 10^7 = CFU usually u use -> (1 x 10^9 x $OD/_{600nm}$

V. Natriegens viability in dilution series

V. Natriegens showed no growth, except for the 10^{-1} dilution plate.

Hypothesis: Since *V. Natriegens* is a halophile, they might die due to the lack of NaCl in the MilliQ solution.

Procedures:

A liquid broth was made of *V. Natriegens.* 750 uL was taken to determine OD_{600}, 100 uL was taken and a dilution series was made in MilliQ, H20 and NaCl (30g/L) and LBV media. the 10-1, 10-3, 10-5, 10-7, 10-9 dilution series were plated. 200 uL of the dilution series was used to inoculate small agar plates., The fluid was dispersed using a Drigalski Spatula.

V. Natriegens viability in dilution series

	A	B	C	D	E	F
1	Dilution Solution	10-1	10-3	10-5	10-7	10-9
2	H2O	y	N	N	N	N
3	H2O (30g/L NaCl)	Y	Y	Y	63	1
4	LBVibrio	Y	Y	Y	110	24

V. Natriegens CFU determination:

Methods

a liquid broth was made of *V. Natriegens.* From time to time, 750 uL was taken to determine $OD_{600.}$, 100 uL was taken and a dilution series was made in LBV. 0.2 mL of the dilution series was then used to inoculate small agar plates. The fluid was spread out using a Drigalski Spatula.

Results

Copy of CFU vibrio.xlsx

Relationship: $2 \times 10^8 \times OD_{600nm} + 2 \times 10^7$ -> use $2 \times 10^8 \times OD_{600nm}$

what can be observed is that for the same amount of OD, e. coli has about 5 times as much CFU