# EColorRace

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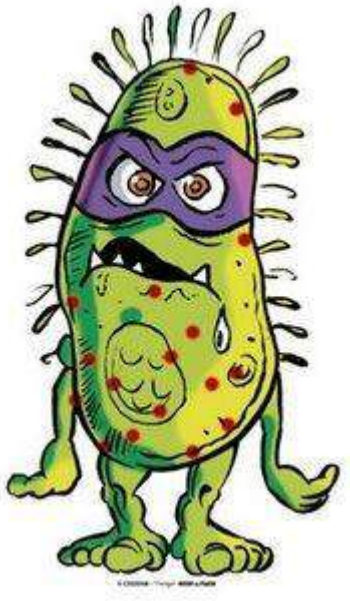
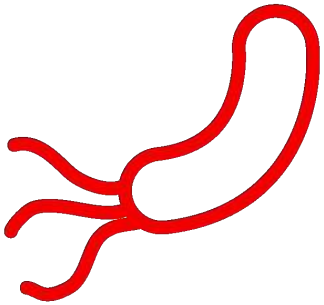
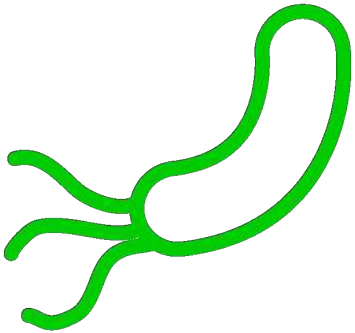


# Fluorescence expression GFP or RFP in *E.coli* costs energy



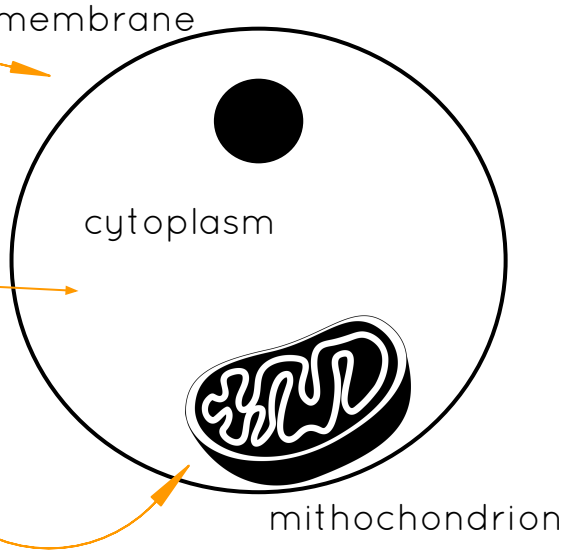
RFP



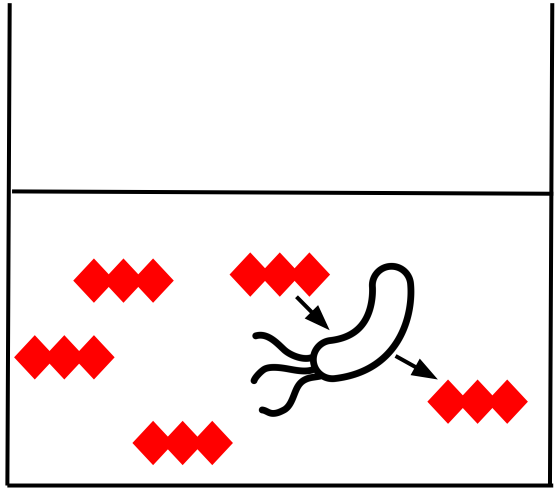
GFP

DEPENDING ON

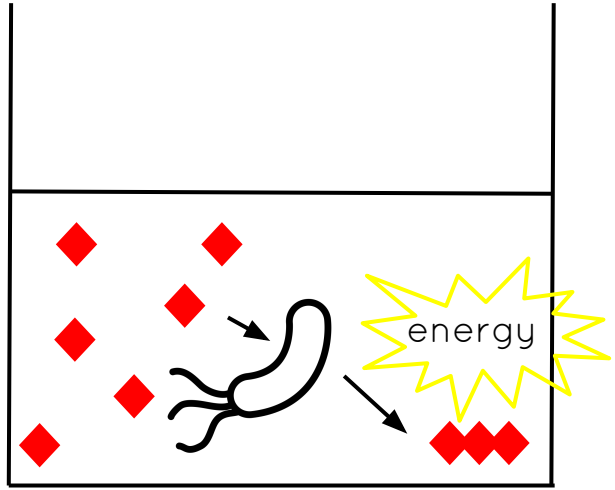
STRAINS



# Different media influence molecular synthesis in *E.coli*



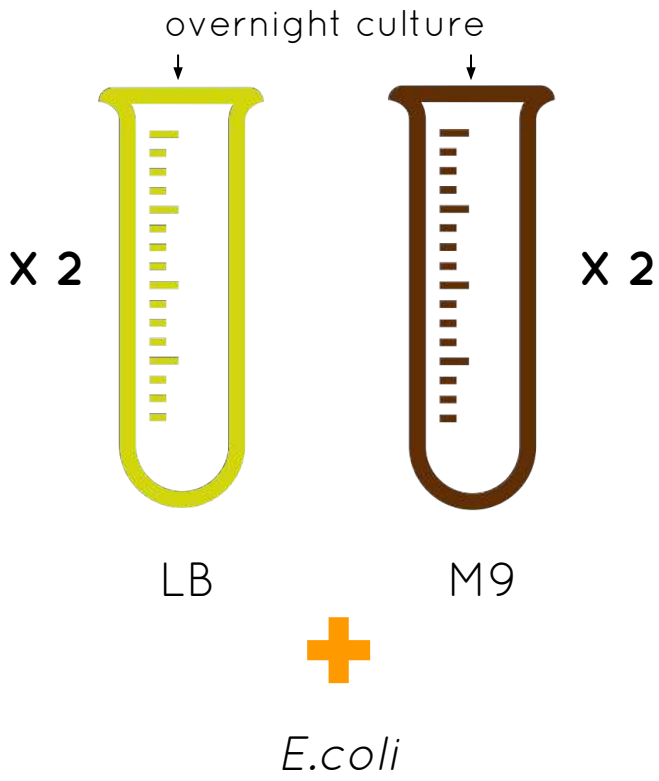
Rich media LB

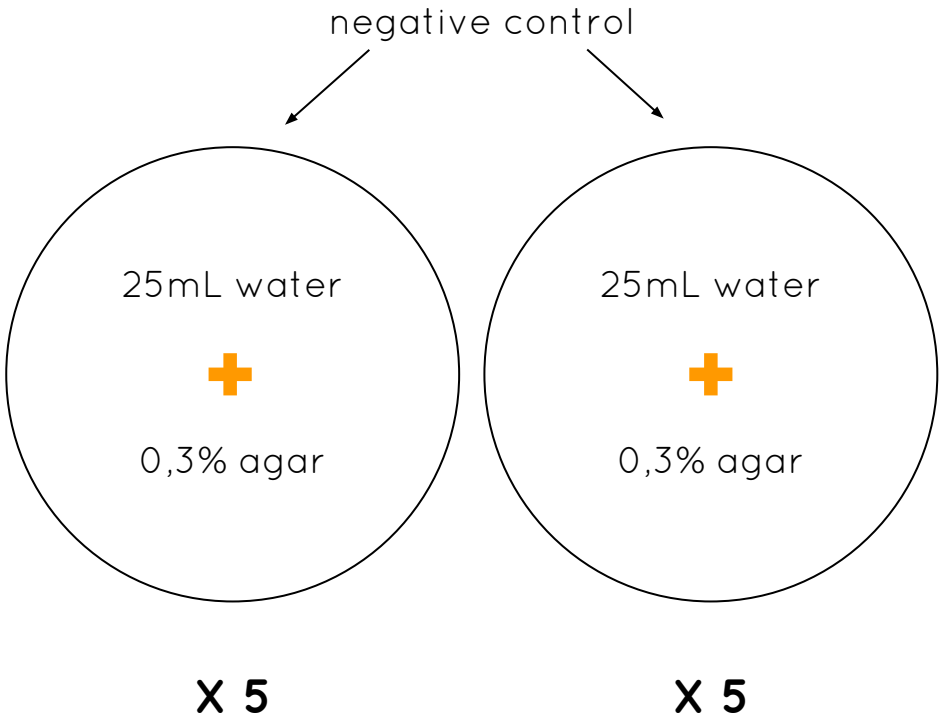



Media Minimum M9

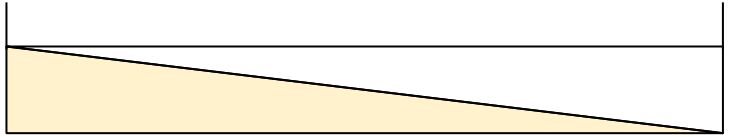
Who between starving *E. coli* and satiated ones is more sensitive to a nutrient gradient ?

# Prepare *E.coli* cultures and controls

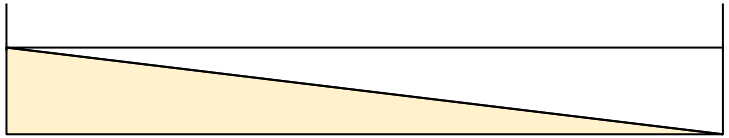


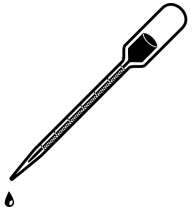
# Using plate gradient to compare starving and satiated *E.coli*



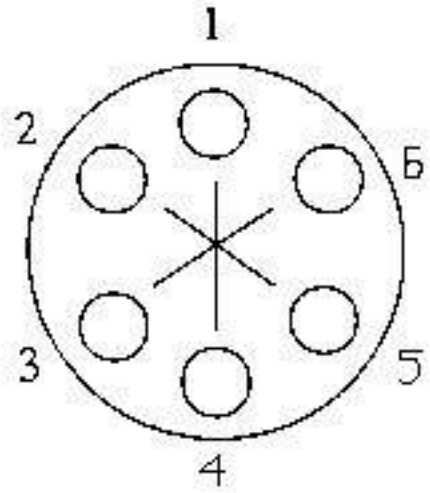
12,5mL LB ✚ 12,5mL water
0,3% agar



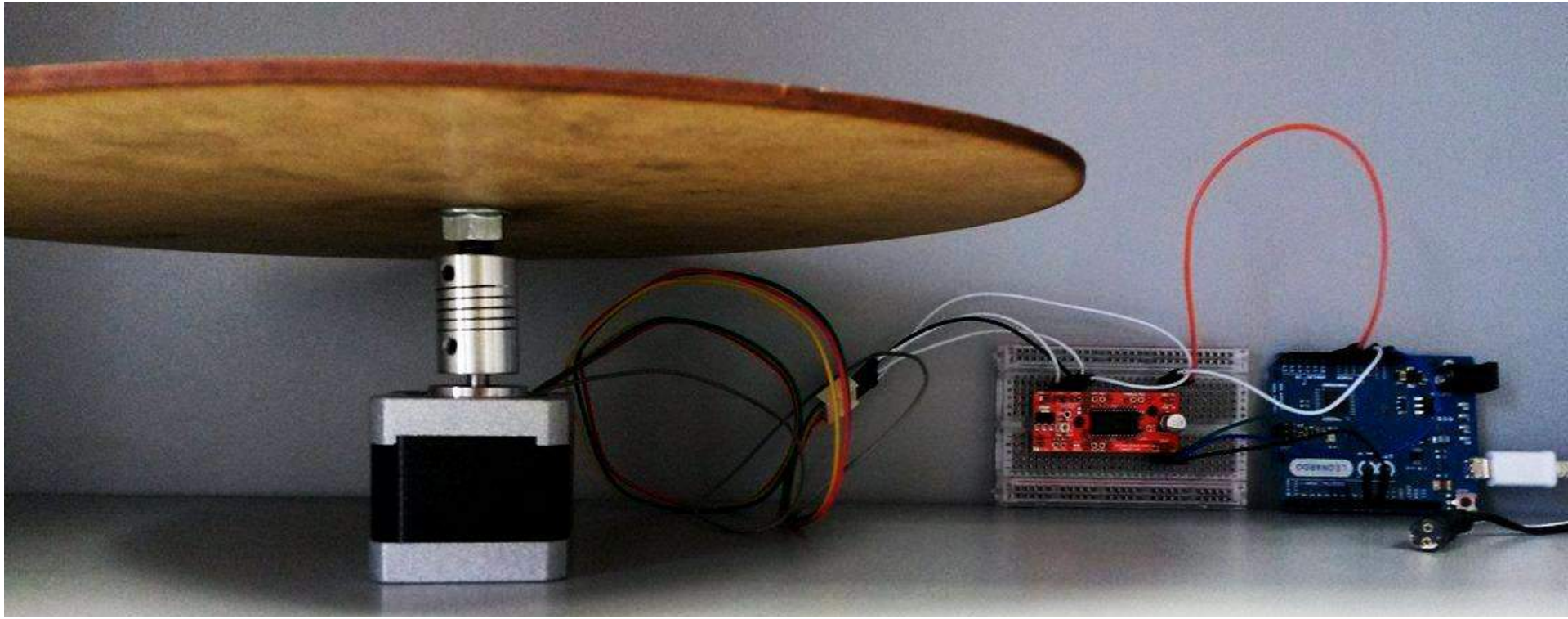
X 5

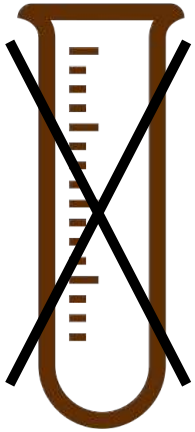


X 5



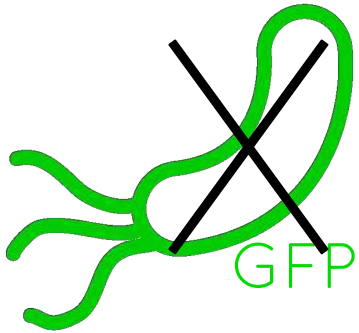

# Collect data automatically using our robot





X 2

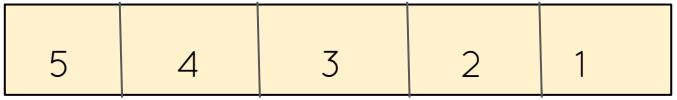
M9




How RFP respond to a nutrient gradient over time ?

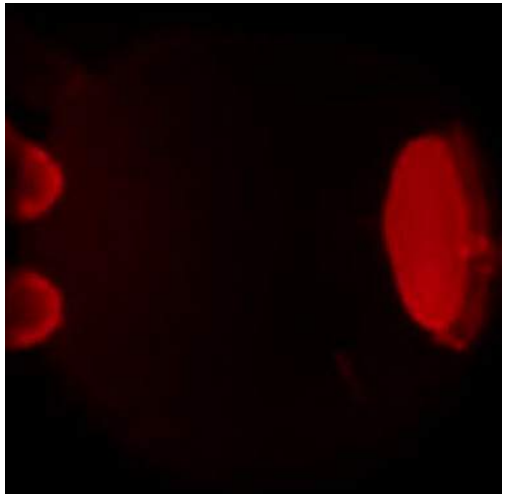
# Determine severals plate areas to collect data

LB nutrient gradient

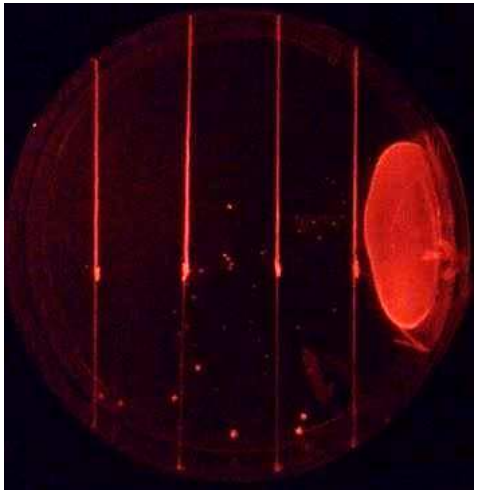



5 ≠ areas

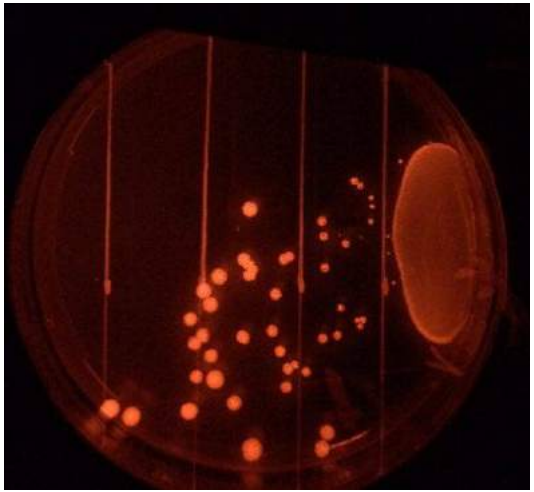
T1 = 15h



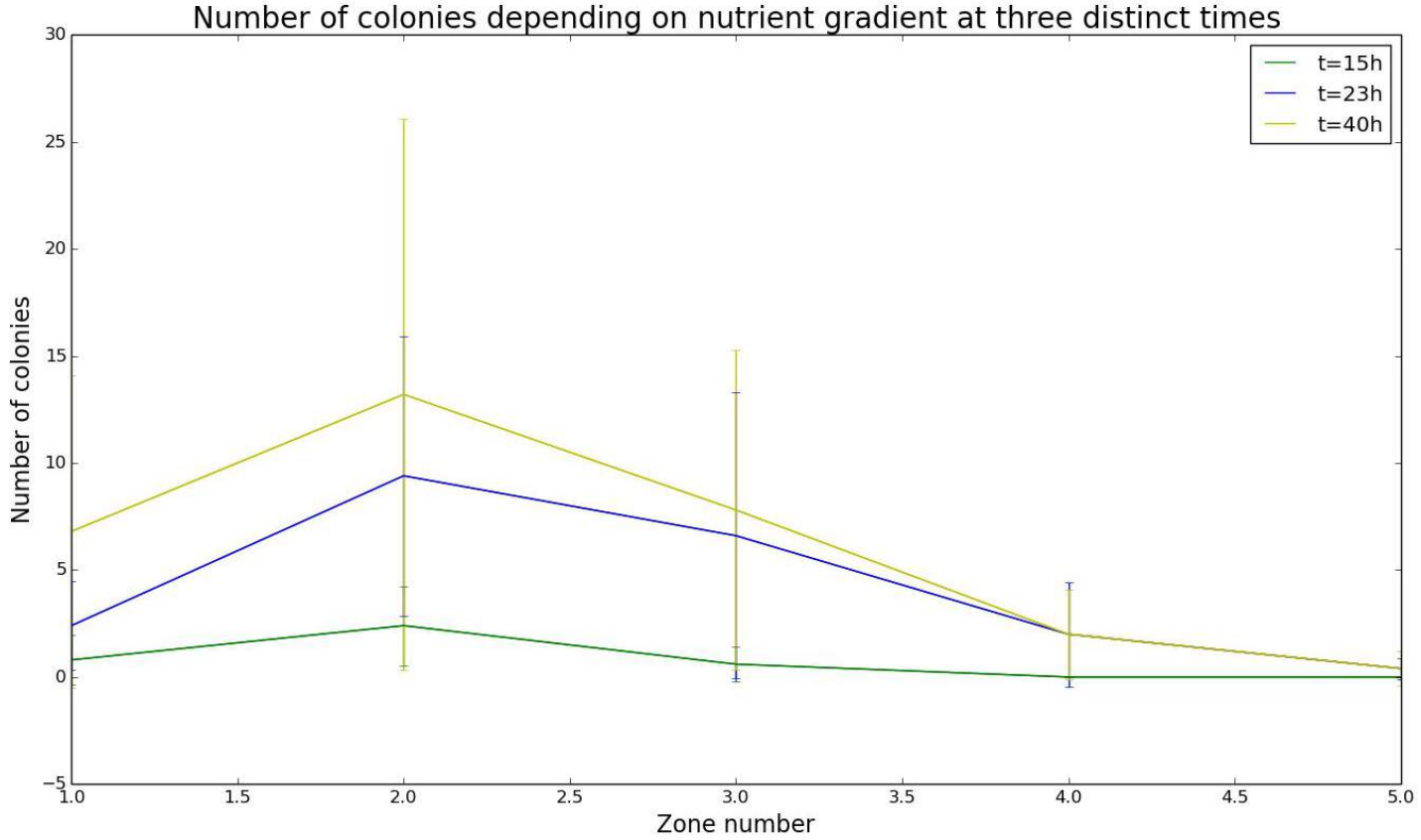
T2 = 23h



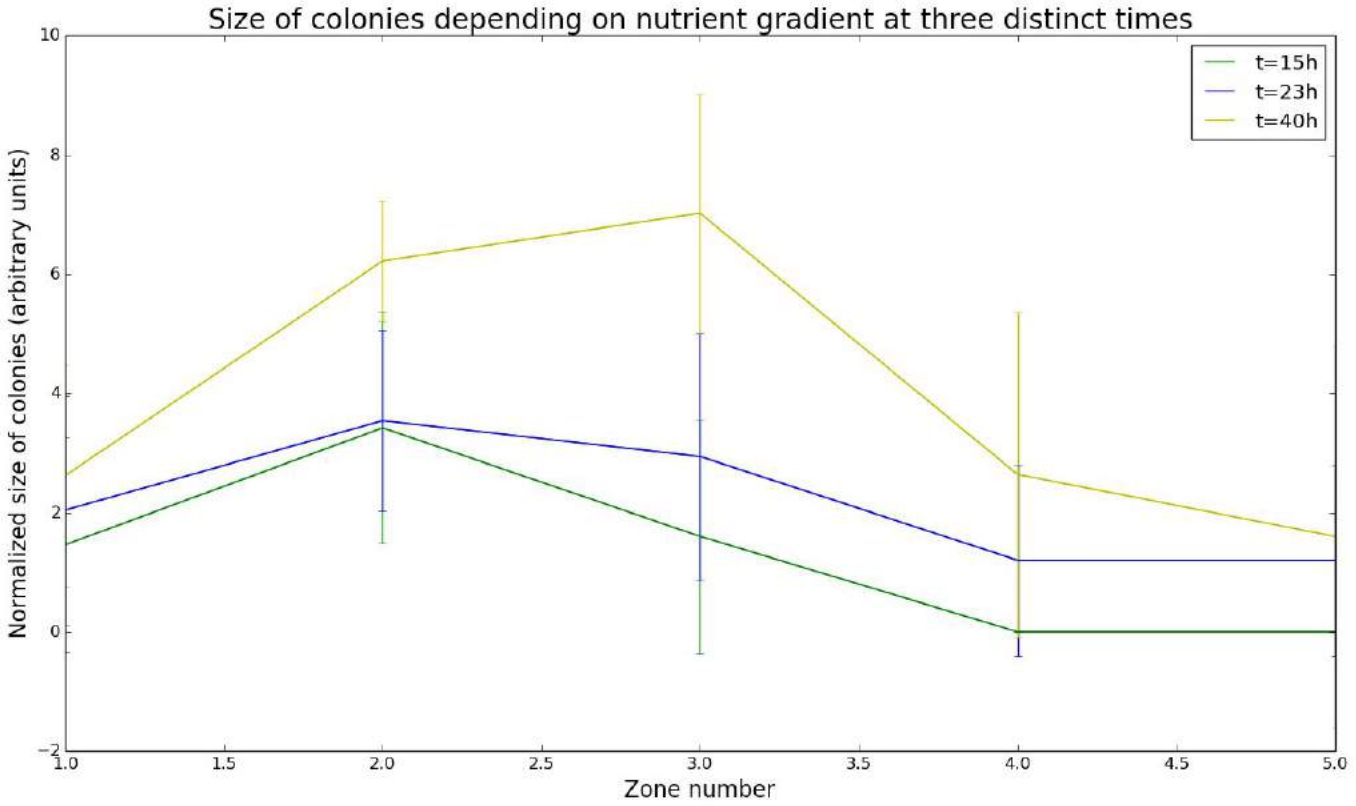
T3 = 40h



# Number of colonies by area doesn't evolve throug gradient



# Colony size depends on the gradient



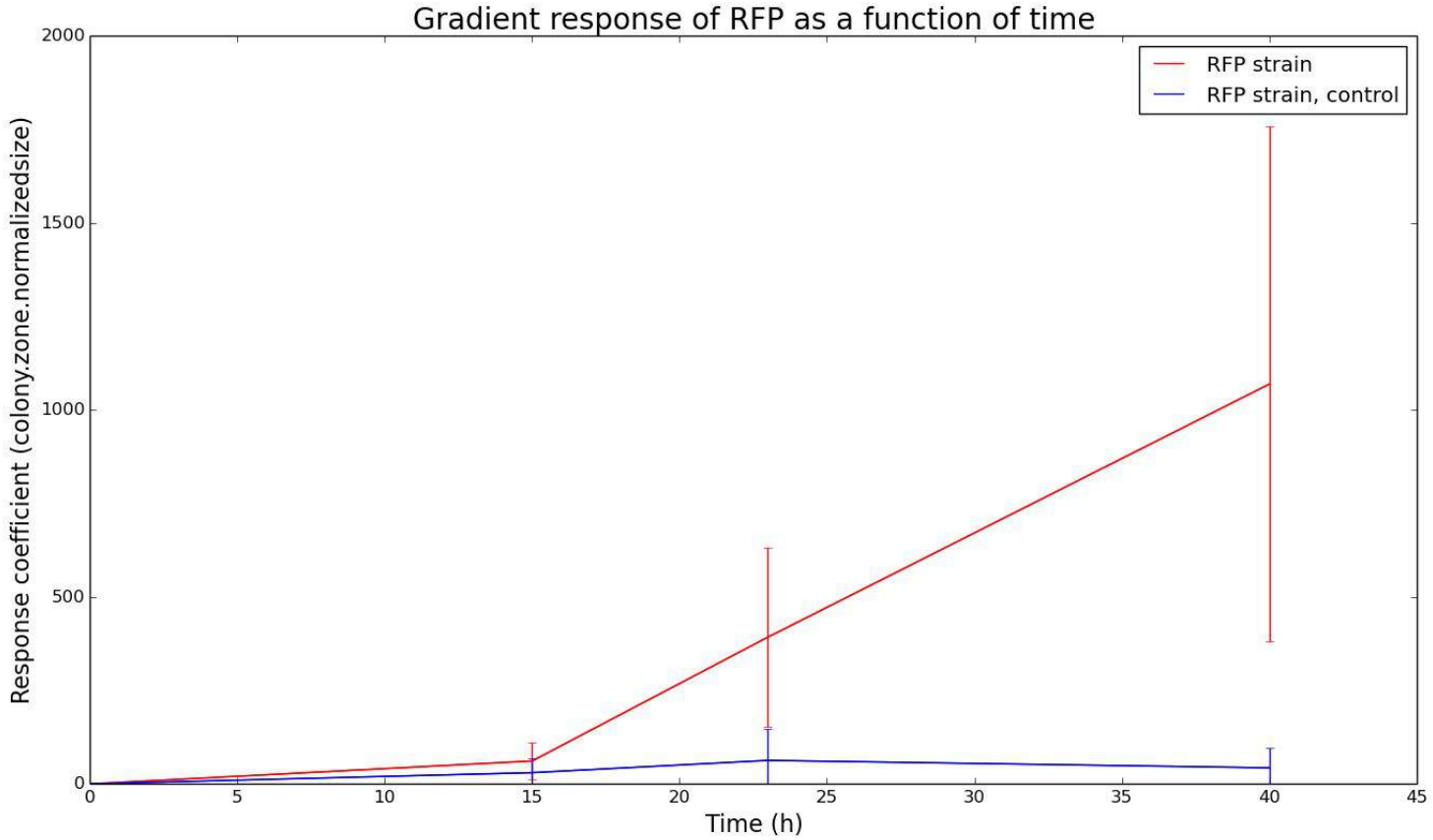
# Analysing our data thanks to a new rating

Coefficent response to the gradient

=

$\Sigma$ area$^2$ ✖ number of colonies ✖ size of colonies

# E. coli respond to a gradient



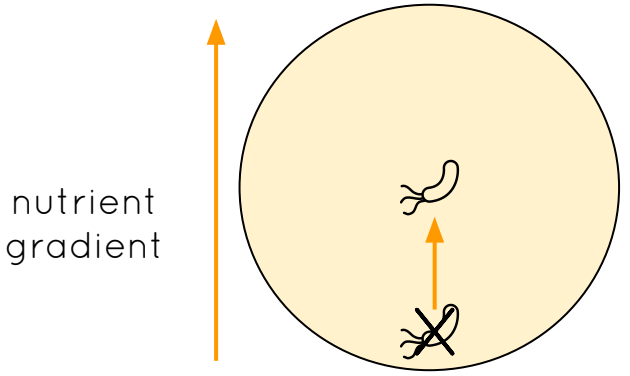
# No possible winner because of experimental mistakes

→ RFP *E.coli* response to a nutrient gradient

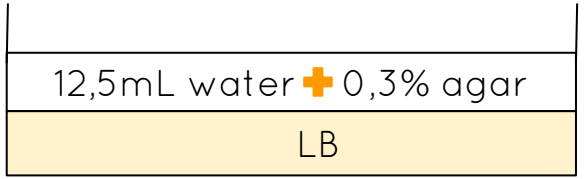
→ Hghest number of colonies in area 2

→ No more motility when there is enought nutrients

→ Size increases over time




controls



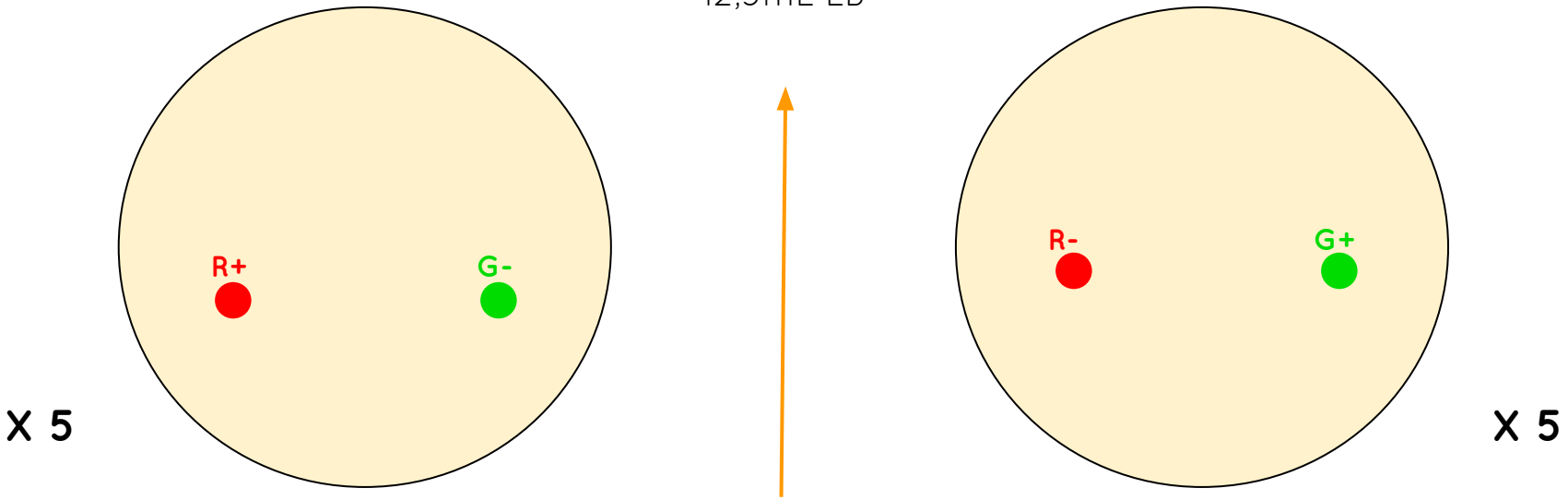
# Do interactions between ≠ *E.coli* influence their gradient response?

**R+** RFP E.coli grown in LB
**R-** RFP E.coli grown in M9
**G+** GFP E.coli grown in LB
**G-** GFP E.coli grown in M9

nutrient gradient

12,5mL water + 0,3% agar

12,5mL LB



# Thank you...

Tamara

Aïmen, Ivan

Daniel Kearns

Garage Renault

Le mec de pare-brise

Chantal

Paul-Henry

# References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