

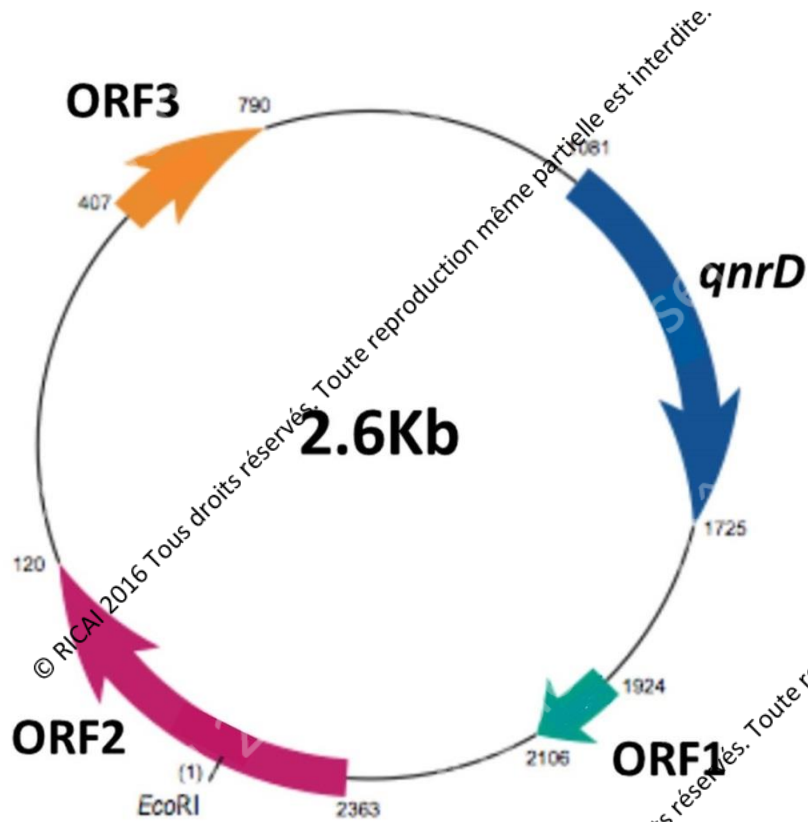
***qnrD* regulation is SOS-mediated by sub-MIC Tobramycin in *Escherichia coli*.**

Anamaria BABOSAN

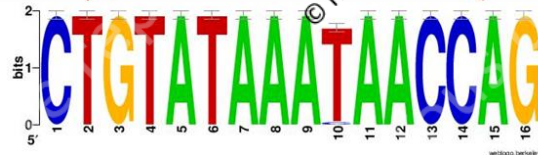
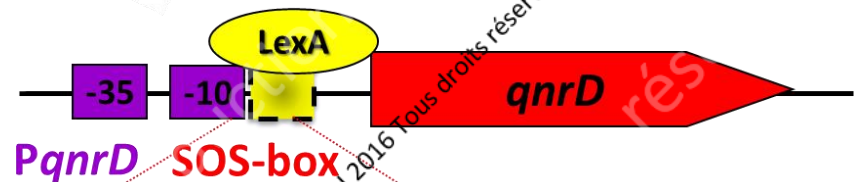
Christophe de Champs Lab



qnrD-bearing small plasmids



- Small plasmids in *Proteaceae*
- 4 ORFs : 1 *qnrD*
- Plasmid Mediated Quinolones Resistance
- Low level of resistance



SOS response induction

**DNA-damaging agents
UV, MMC, ATBs**



ssDNA



SOS



Repair



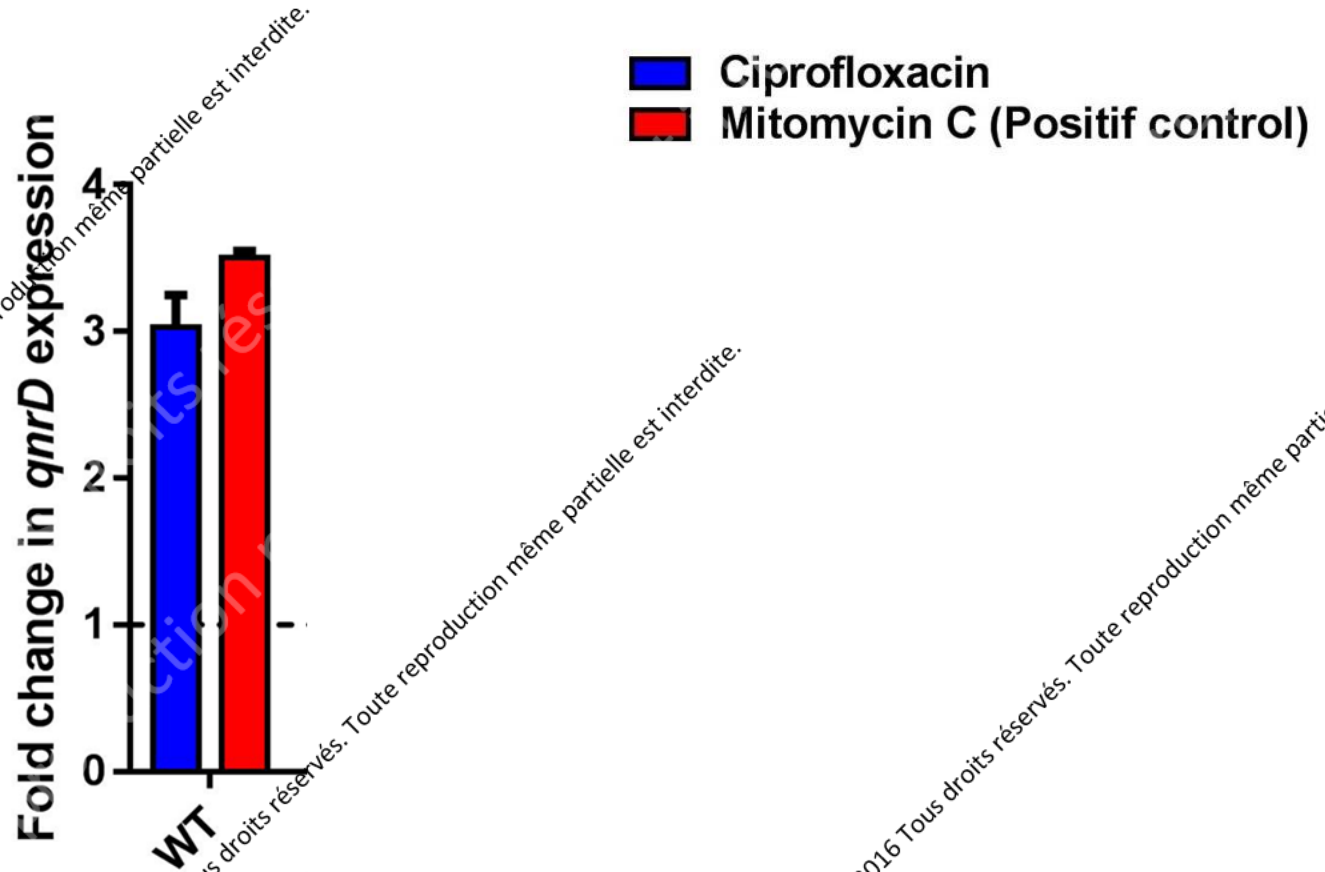
Survival

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Is *qnrD* gene expression SOS-regulated?

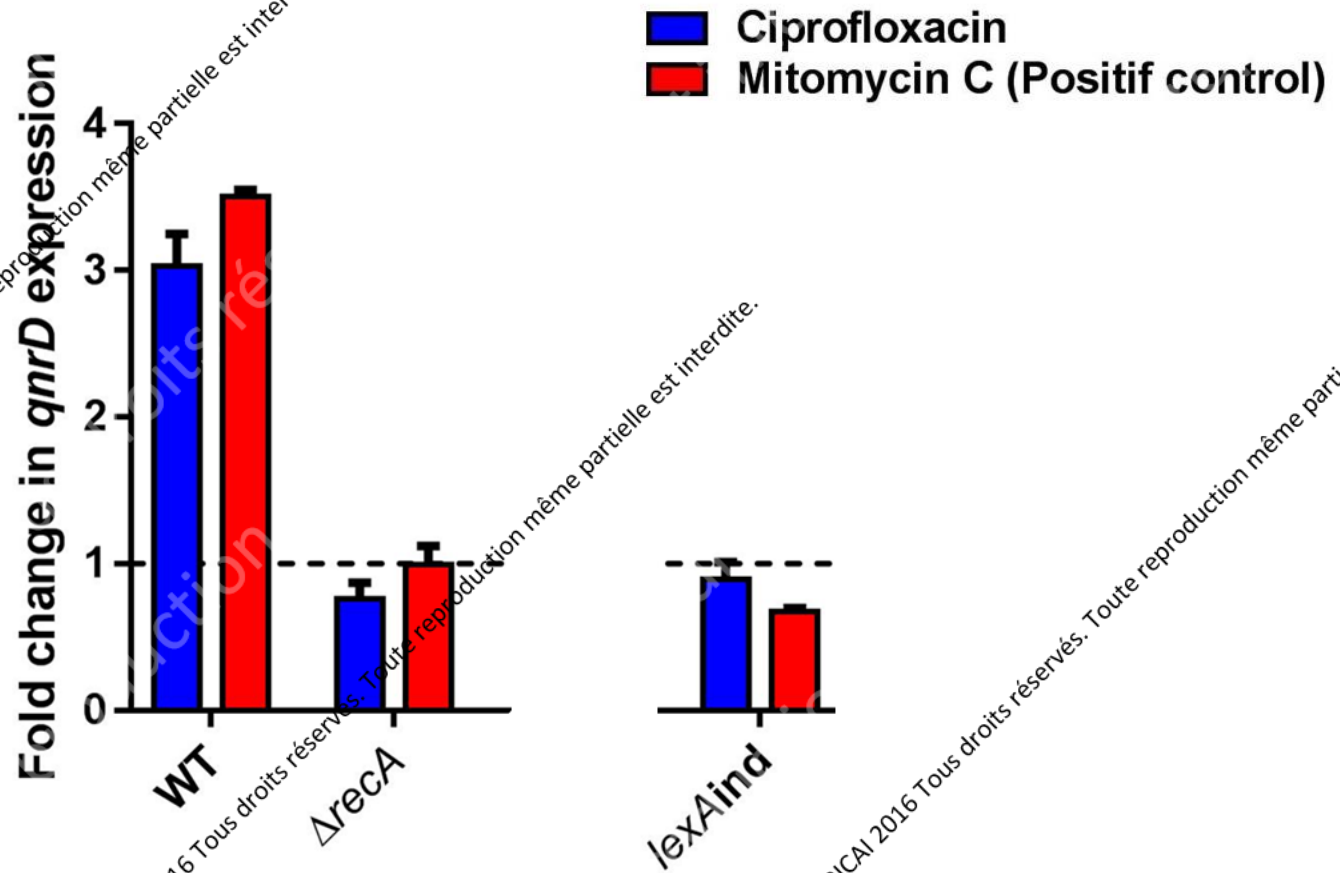


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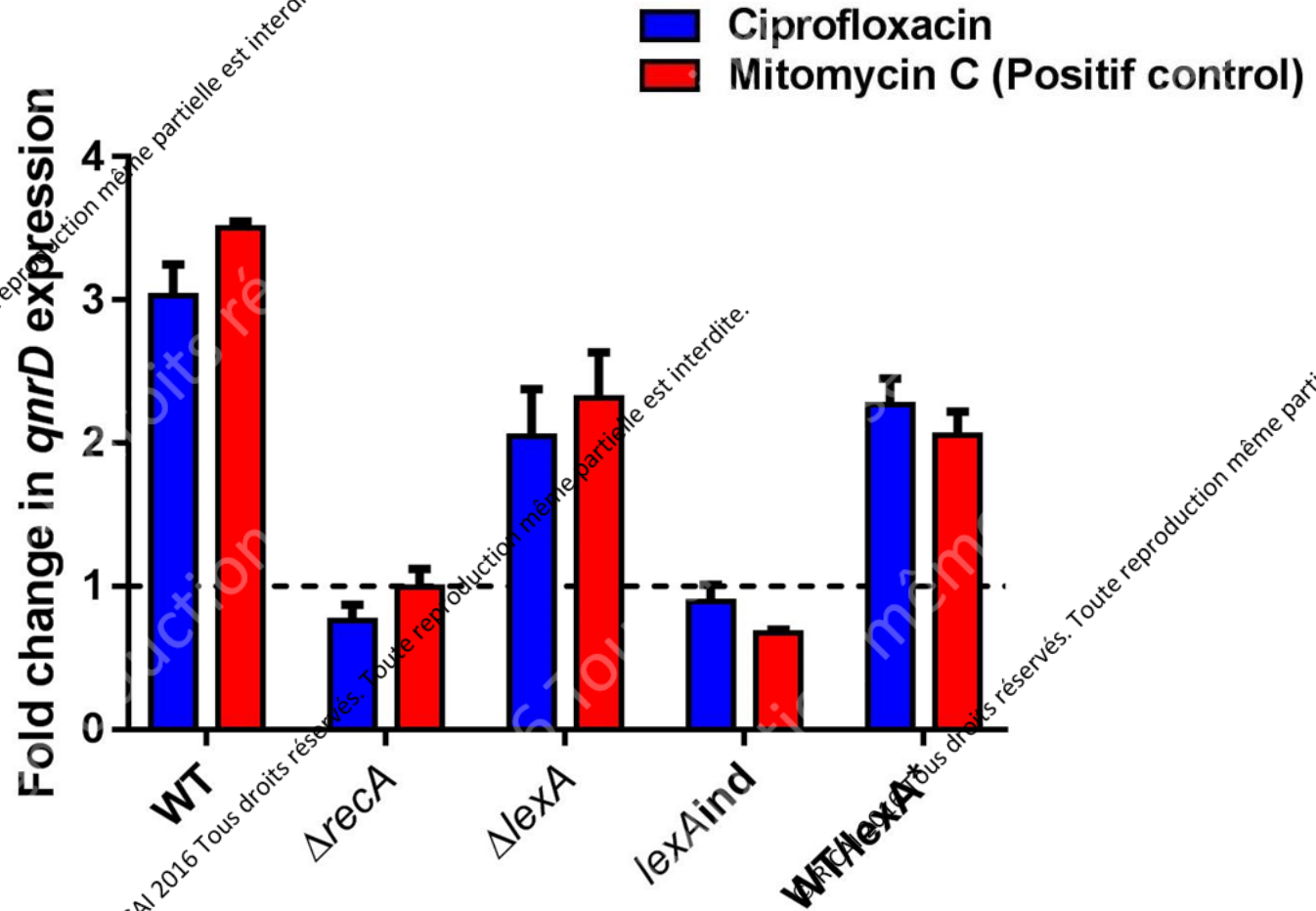


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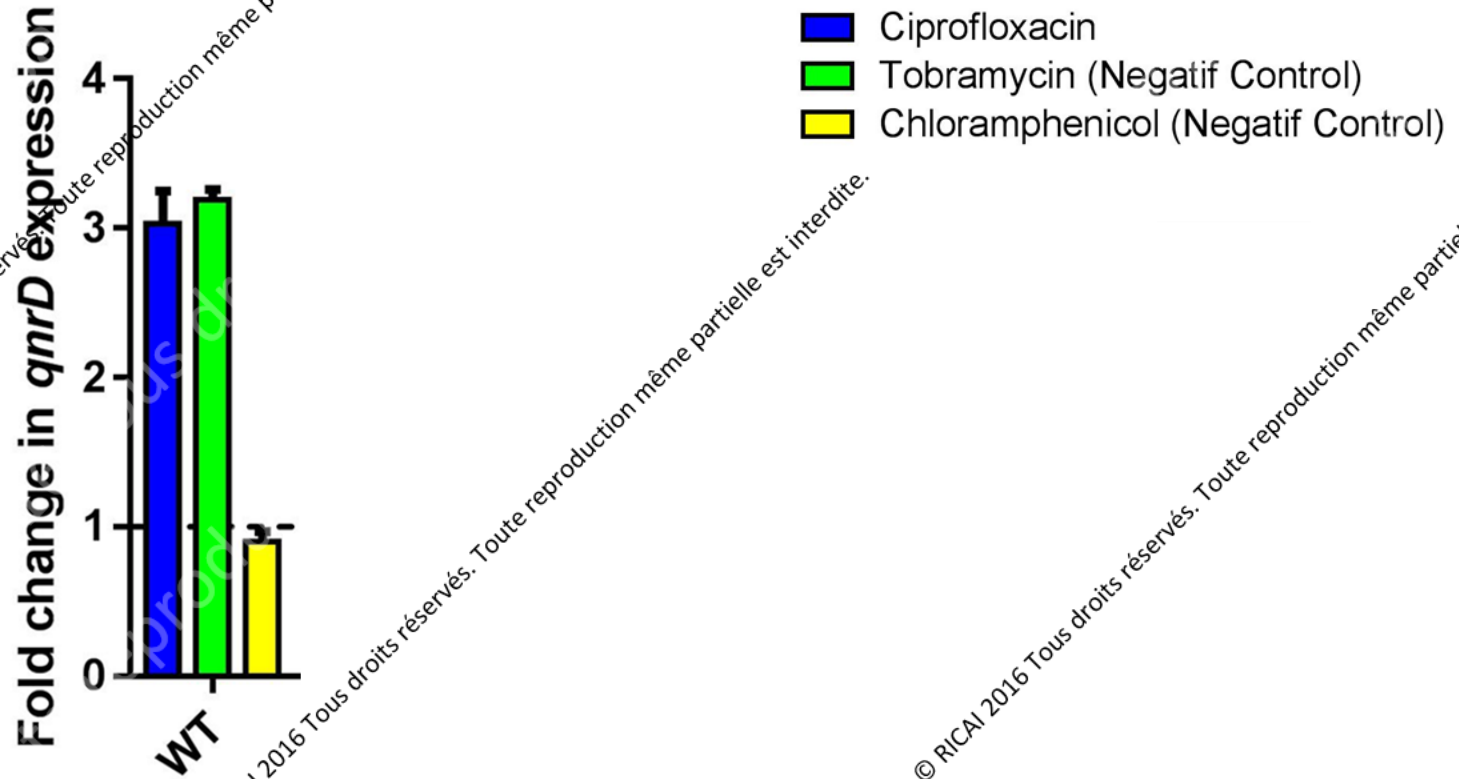
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Is *qnrD* gene expression SOS-regulated?

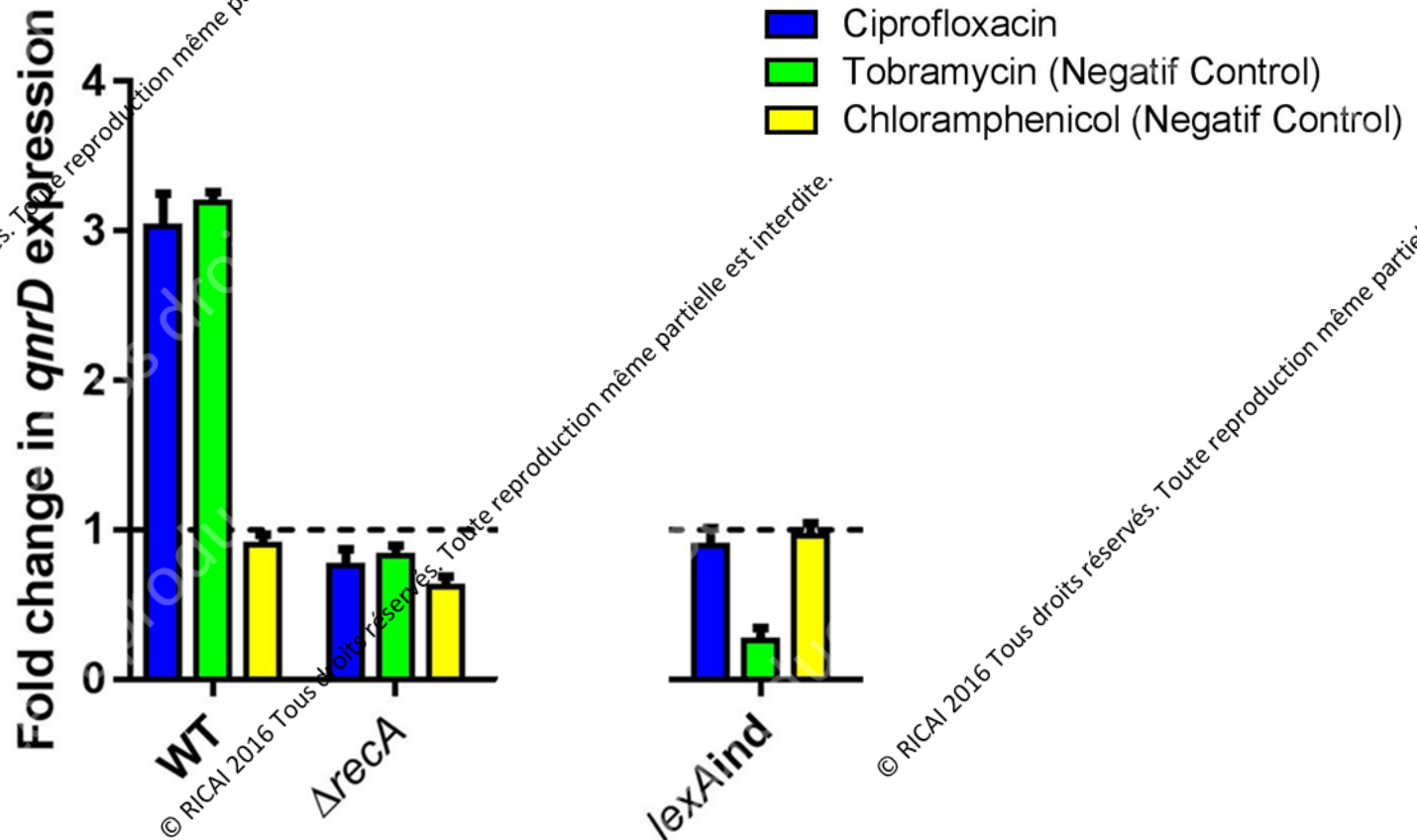


***qnrD* expression is SOS regulated in a LexA/RecA dependent manner.**

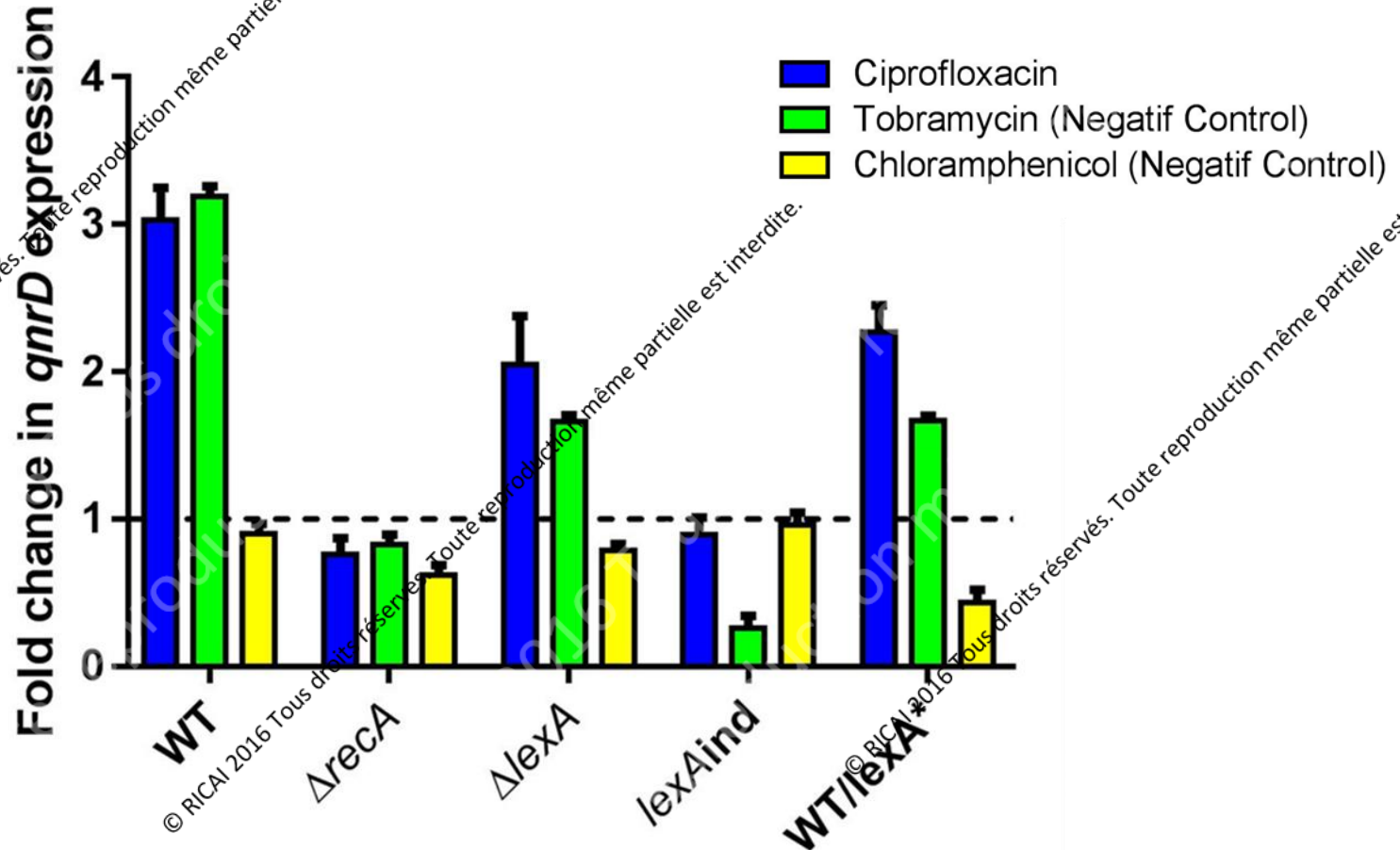
Is *qnrD* SOS-mediated expression specifically induced by fluoroquinolones?



Is *qnrD* SOS-mediated expression specifically induced by fluoroquinolones?

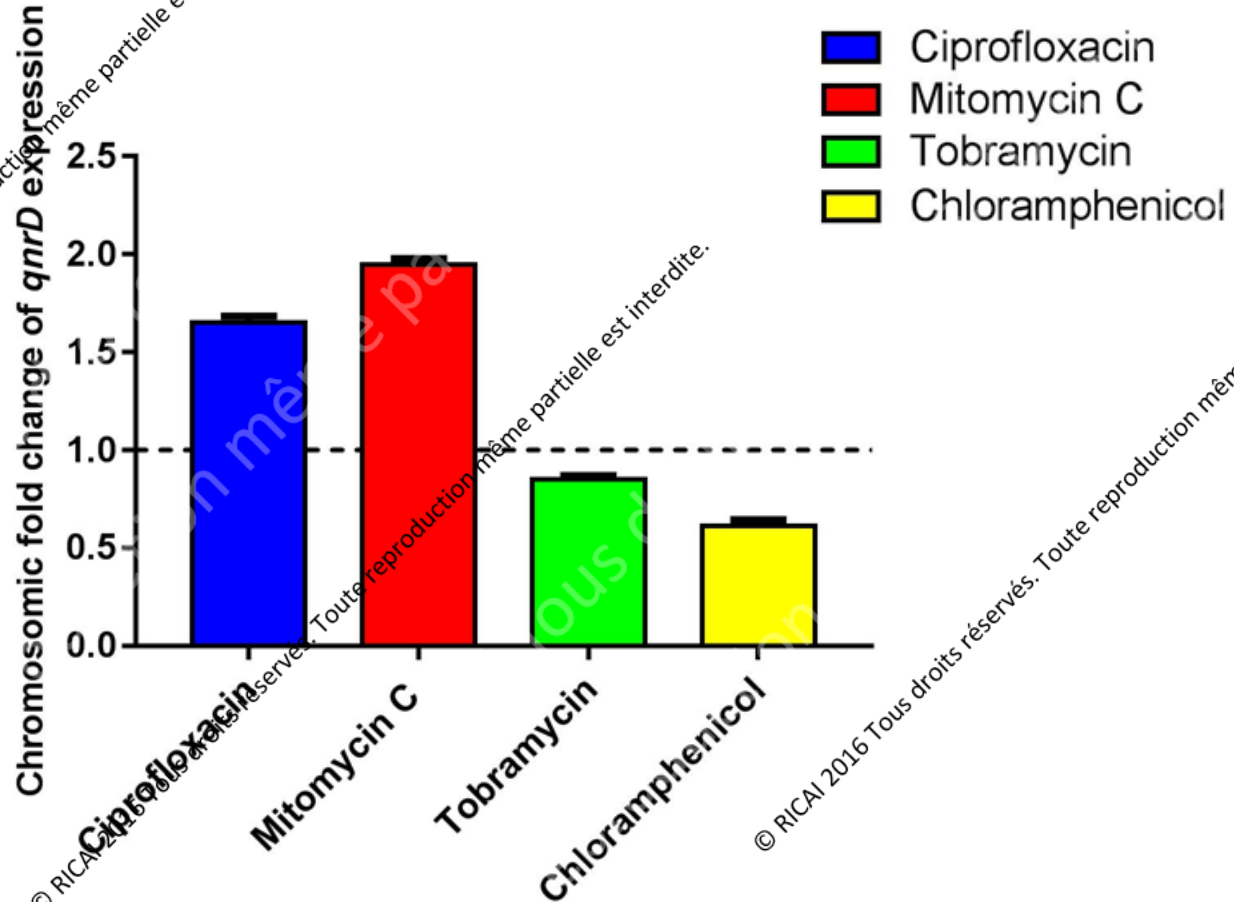


Is *qnrD* SOS-mediated expression specifically induced by fluoroquinolones?



***qnrD* gene expression is upregulated after sub-MIC TOB treatment.**

Why TOB induces SOS-dependent *qnrD* expression in this *E. coli* strain?



Small plasmid presence is needed for SOS induction by sub-MIC TOB.

Sub-MIC TOB causes DNA damage through ROS formation in this *E. coli* strain?

Sub-MIC
TOB



***E. coli*: no ROS and SOS induction.**

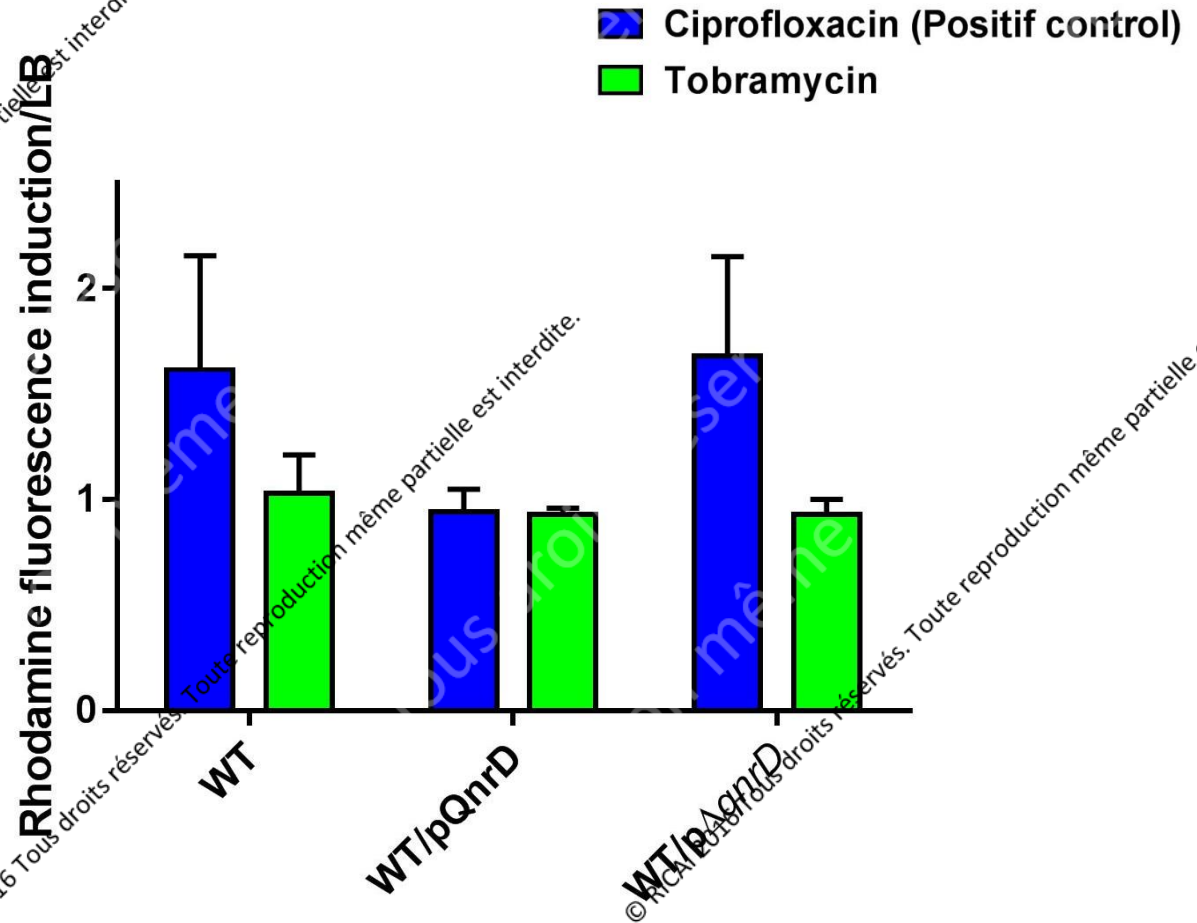
***V. cholerae*: ROS and SOS induction.**

Do small plasmids stimulate ROS formation?

Dihydro-rhodamine 123



Rhodamine 123



No ROS TOB-stimulated formation in the presence of *qnrD*.

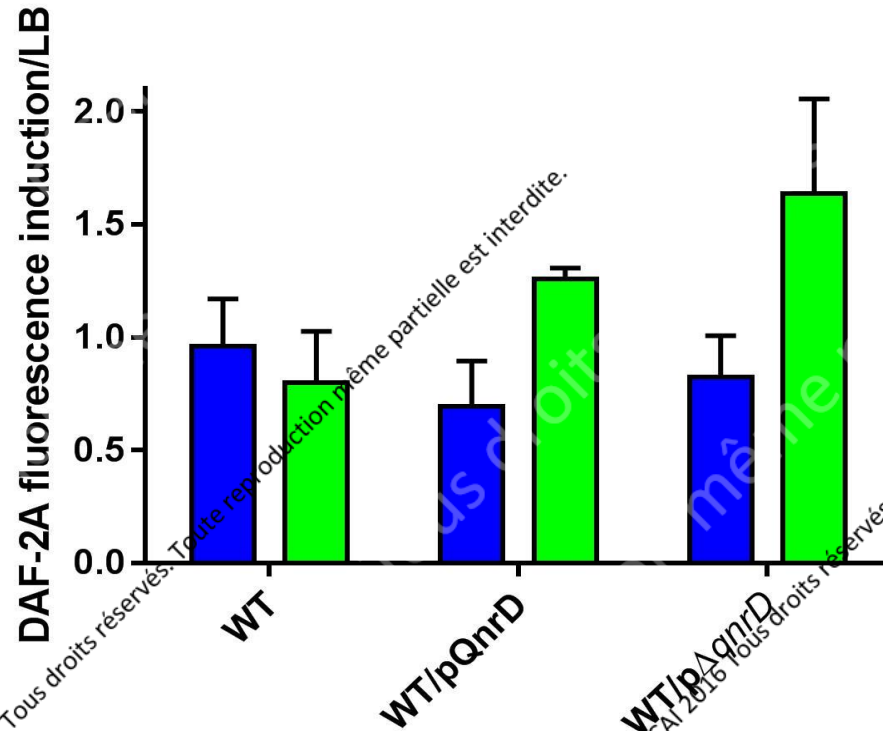
Do small plasmids stimulate NO formation?

5,6-Diaminofluorescein diacetate



NO/NOS

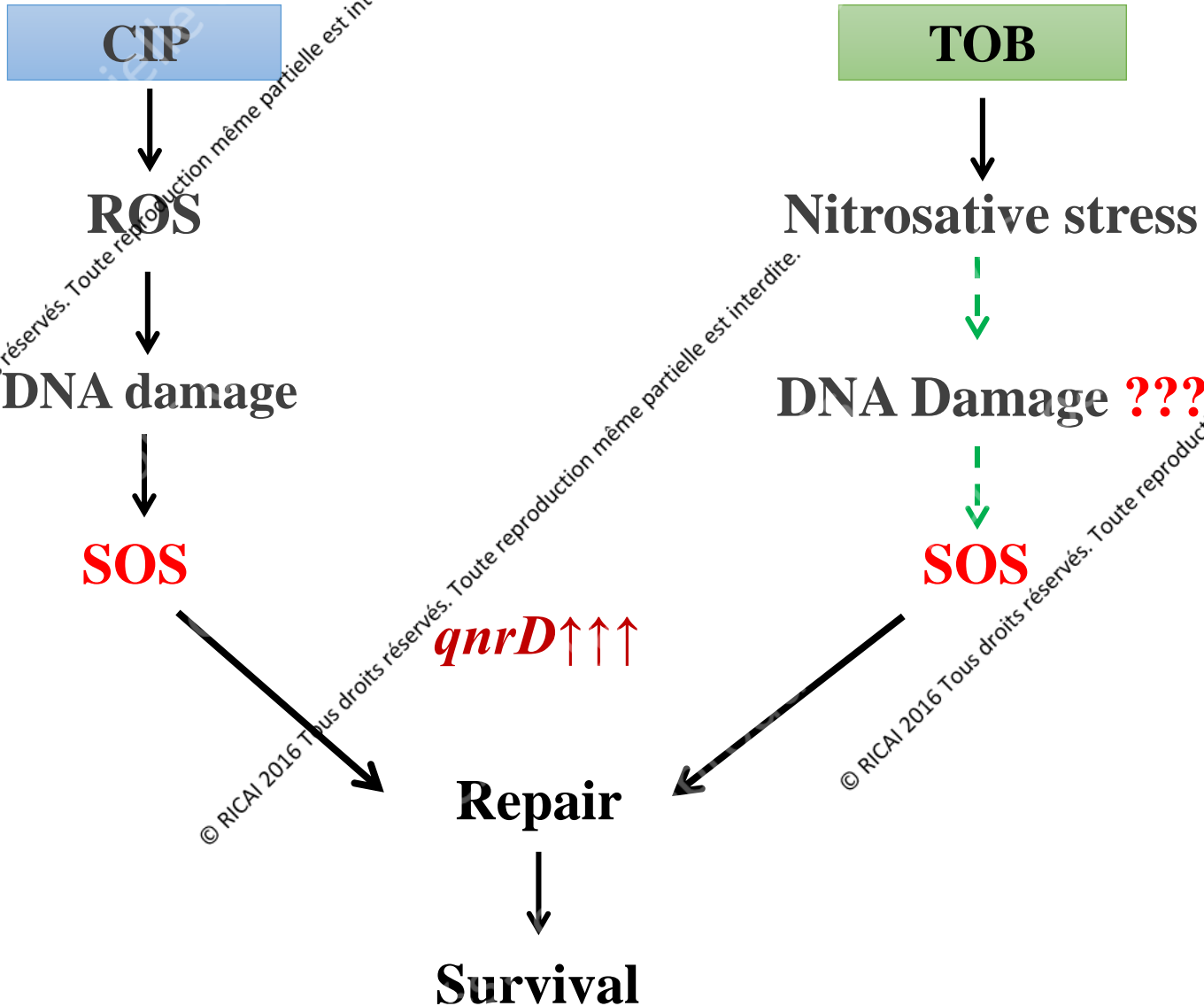
Ciprofloxacin
Tobramycin



NO formation in *E. coli* carrying *qnrD* with TOB.

Summary

E. coli pl. *qnrD*



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