



DNA methylation and the Redox regulator OxyR: an epigenetic story in the entomopathogenic bacterium *Xenorhabdus* ?

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Titre de la présentation :

DNA methylation and the Redox regulator OxyR: an epigenetic story in the entomopathogenic bacterium *Xenorhabdus*?

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Mots clefs :

Oxidative stress, DNA Methylation, Gene regulation, Entomopathogenic bacterium, Phenotypic heterogeneity

Résumé (250 mots max.) :

Dam DNA methylation can modify the affinity of transcriptional regulators for their binding sites and can therefore lead to the emergence of subpopulations, expressing or not some genes. Because these differential gene regulations can be transmitted to daughter cells, this phenomenon is considered as an epigenetic mechanism.

Xenorhabdus nematophila is an enterobacterium symbiotically associated to a soil nematode and pathogenic for several insects. Its methylome analysis revealed that >99% of Adenines in GATC motifs of the genome are methylated. One of the rare unmethylated motifs is located in a putative OxyR-binding site in a promoter region.

We constructed a *Xenorhabdus oxyR* mutant, and phenotypic analysis confirmed the role of OxyR in adaptation to oxidative environments.

We are now investigating if some genes are transcriptionally regulated by OxyR in a DNA methylation-dependent manner.