

Publication

A new class of proteins regulating gene expression in enterobacteria

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YmoA and Hha are highly similar bacterial proteins downregulating gene expression in *Yersinia enterocolitica* and *Escherichia coli*, respectively. The phenotype of *ymoA* mutants evokes that of mutants affected in some histone-like proteins. This paper describes complementation of a *ymoA* mutation in *Y. enterocolitica* by the *hha* gene from *E. coli*. We show that YmoA and Hha are not only very similar proteins but that they are functionally interchangeable. Genetic experiments indicate that Hha can also stimulate transposition events *in vivo*. By Southern blot analysis we detected *hha*-homologous genes at least in *Citrobacter diversus*, *Shigella flexneri*, *Shigella dysenteriae*, *Klebsiella pneumoniae* and *Salmonella typhimurium*. We suggest that both YmoA and Hha belong to a new family of proteins downregulating gene expression in different enterobacteria.

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