

## INORGANIC PHOSPHATE REGULATION OF A PHOSPHOPORIN IN *VIBRIO CHOLERAE* AND ITS ROLE IN BILE SALTS RESISTANCE

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*Vibrio cholerae* causes cholera, an often fatal human diarrhoeal disease. The bacteria colonize the small intestine and there express virulence factors, despite the presence of toxic substances such as bile. Two major outer membrane proteins (OMPs), OmpU and OmpT, are critical for bile resistance in vitro. Recently, a new OMP (VCA1008), which is expressed in vivo and is essential for colonization, has been shown to be highly expressed under low inorganic phosphate (Pi), in a PhoB/PhoR-dependent manner in *V. cholerae* classical strain 569B. VCA1008 bears similarity to PhoE, an anionic porin of *E. coli*, also induced by Pi starvation. In this work we demonstrated that, under low Pi, VCA1008 is expressed by classical and El Tor strains of *V. cholerae*. Moreover, VCA1008 seems to play an essential role in bile resistance, since *V. cholerae* cells under low Pi, in the presence of bile, showed increased levels of VCA1008 and higher activities for the *vca1008* promoter. Furthermore, *V. cholerae* cells expressing VCA1008 presented increased resistance to bile compounds. Other *Vibrio sp.* also produce OMPs (annotated as putative porins) with similarity to VCA1008 under Pi starvation, suggesting that is a general feature of *Vibrionaceae* and that those putative phosphoporins might play important roles in the bacterial physiology.