# Draft genome sequence of Janthinobacterium lividum strain MTR reveals its mechanism of capnophilic behavior

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Janthinobacterium lividum is a Gram-negative bacterium able to produce violacein, a pigment with antimicrobial and antitumor properties. Janthinobacterium lividum colonizes the skin of some amphibians and confers protection against fungal pathogens. The mechanisms underlying this association are not well understood. In order to identify the advantages for the bacterium to colonize amphibian skin we sequenced Janthinobacterium lividum strain MTR, a strain isolated from Cajón del Maipo, Chile. The strain has capnophilic behavior, with growth favored by high concentrations (5 %) of carbon dioxide. Its genome is 6,535,606 bp in size, with 5,362 coding sequences and a G + C content of 62.37 %. The presence of genes encoding for products that participate in the carbon fixation pathways (dark CAM pathways), and the entire set of genes encoding for the enzymes of the glyoxylate cycle may explain the capnophilic behavior and allow us to propose that the CO2 secreted by the skin of amphibians is the signal molecule that guides colonization by Janthinobacterium lividum. 

Capnophilic

Carbon dioxide

Carbon fixation

Janthinobacterium lividum

Violacein

RNA 16S

Article

bacterial colonization

bacterial genetics

bacterial growth

bacterial strain

bacterium

bootstrapping

capnophilic bacterium

gene sequence

genetic association

Janthinobacterium

Janthinobacterium lividum

nonhuman

nucleotide sequence

phylogeny

scanning electron microscopy

sequence analysis

temperature

transmission electron microscopy