


A chemotaxis operon in the bacterium *Desulfovibrio gigas* is induced under several growth conditions

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Abstract: The chemosensory system of bacteria controls their motility and behaviour in different environments. In the present study, we report the identification of the first chemotaxis operon in *Desulfovibrio gigas*. Amino acid sequence analysis revealed seven coding regions for polypeptides with a high similarity to chemotaxis proteins from other organisms. *D. gigas* chemotaxis operon has a similar genetic organisation to chemotaxis operons found in the sequenced genomes of *Desulfovibrio desulfuricans* and *Desulfovibrio vulgaris*. Control of gene expression was assessed by real-time reverse transcription-PCR in cells grown under different conditions. mRNA levels were enhanced in the presence of thiosulfate and sulfite and decreased upon exposure to NO. No effect was observed in the presence of O₂, NaNO₂, pyruvate or fumarate. These results show that the expression of the chemotaxis operon is enhanced in the presence of thiosulfate and sulfite indicating that under these compounds a chemotactic response seems to be triggered in *D. gigas*.