

Deletion of flavodoxin gene in *Desulfovibrio gigas* reveals its participation in thiosulfate reduction



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Abstract: The gene encoding *Desulfovibrio gigas* flavodoxin was deleted to elucidate its physiological role in the sulfate metabolism. Disruption of *flr* gene strongly inhibited the reduction of thiosulfate and exhibited a reduced growth in the presence of sulfite with lactate as electron donor. The growth with sulfate was not however affected by the lack of this protein. Additionally, *flr* mutant cells revealed a decrease of about 50% in the H₂ consumption rate using thiosulfate as electron acceptor. Altogether, our results show in vivo that during sulfite respiration, trithionate and thiosulfate are produced and that flavodoxin is specific for thiosulfate reduction. (c) 2005 Federation of European Biochemical Societies. Published by Elsevier B.V. All rights reserved.

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