

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



Author(s): Broco M, Rousset M, Oliveira S, Rodrigues-Pousada C

Source: FEBS LETTERS **Volume:** 579 **Issue:** 21 **Pages:** 4803-4807 **Published:** AUG 29 2005

Times Cited: 5 **References:** 23 **Citation Map beta**

Abstract: The gene encoding *Desulfovibrio gigas* flavoredoxin 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 H-2 consumption rate using thiosulfate as electron acceptor. Altogether, our results show in vivo that during sulfite respiration, trithionate and thiosulfate are produced and that flavoredoxin is specific for thiosulfate reduction. (c) 2005 Federation of European Biochemical Societies. Published by Elsevier B.V. All rights reserved.

Document Type: Article

Language: English

Author Keywords: flavoredoxin; mutant; thiosulfate reduction; sulfite reduction; *Desulfovibrio gigas*

KeyWords Plus: SULFITE REDUCTION; TRITHIONATE; BISULFITE; FRUCTOSOVORANS; FLAVOPROTEIN; PURIFICATION; HYDROGENASE; REDUCTASES; BACTERIUM; VECTORS

Reprint Address: Rodrigues-Pousada, C (reprint author), Univ Nova Lisboa, Inst Tecnol Quim & Biol, Genom & Stress Lab, Ave Republ,EAN, P-2784505 Oeiras, Portugal

Addresses:

1. Univ Nova Lisboa, Inst Tecnol Quim & Biol, Genom & Stress Lab, P-2784505 Oeiras, Portugal
2. CNRS, Unite Bioenerget & Ingn Prot, F-13402 Marseille, France
3. Univ Evora, Dept Biol, P-7002554 Evora, Portugal

E-mail Addresses: claudina@itqb.unl.pt