Proteome of *Rhodopseudomonas palustris* Shows Metabolic Diversity and Regulation

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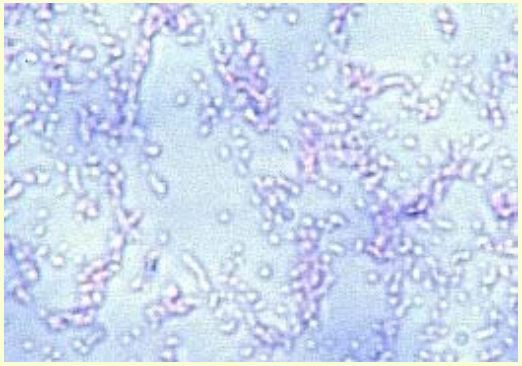
- *Rhodopseudomonas palustris* is a purple nonsulfur anoxygenic phototrophic bacterium that is metabolically versatile with respect to energy generation, carbon and nitrogen metabolism.
- We characterized and compared the baseline proteome of a *R. palustris* wild-type strain grown under six metabolic conditions. Trypsin-digested peptides were analyzed by LC MS/MS.
- Using these methods we identified 1,664 proteins out of 4,836 possible predicted proteins.
- Over 311 proteins exhibiting marked differences between conditions, many of these being hypothetical proteins showing strong correlations with different metabolic modes. For example, five proteins encoded by genes from a novel operon appeared only after anaerobic growth with no evidence in extracts of aerobically-grown cells. Proteins known to be associated with specialized growth states such as nitrogen fixation, photoautotrophic, or growth on benzoate, were observed to be distinctly up-regulated under those states.



***Rhodopseudomonas palustris* at 400X, stained**

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Determination and Comparison of the Baseline Proteomes of the Versatile Microbe *Rhodopseudomonas palustris* under Its Major Metabolic States

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Proteome of *Rhodopseudomonas palustris* Shows Metabolic Diversity and Regulation More Information

- **NC VerBerkmoes, MB Shah, PK Lankford, DA Pelletier, MB Strader, David L. Tabb, WH McDonald, JW Barton, GB Hurst, L Hauser, BH Davison, JT Beatty, CS Harwood, FR Tabita, RL Hettich, and FW Larimer, "Determination and Comparison of the Baseline Proteomes of the Versatile Microbe *Rhodopseudomonas palustris* under its Major Metabolic States," *J. Proteome Res.* 5(2):pp tbd (2006) web release, next issue**