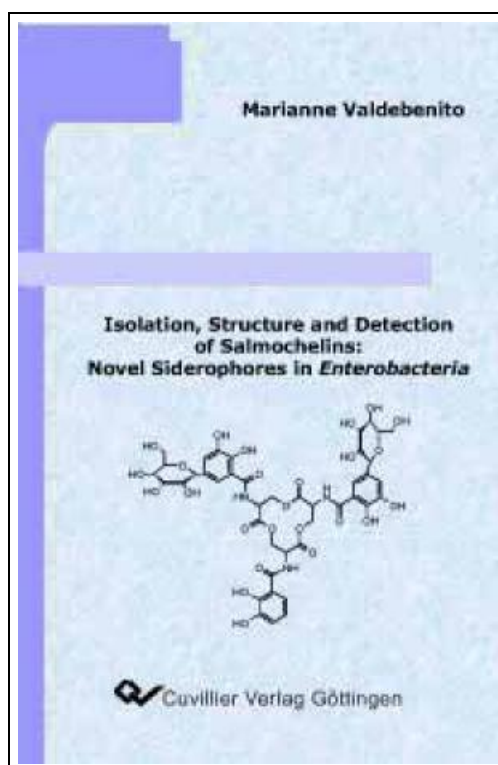


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Cuvillier Verlag Jan 2007, 2007. Taschenbuch. Book Condition: Neu. 208x147x7 mm. Neuware - Iron is an essential nutrient for most living microorganisms. To ensure accessibility of iron in their environment, under iron poor conditions, aerobic and facultative aerobic microorganisms synthesize and release into their environment highly selective low-molecular-mass iron chelating agents termed siderophores. In 1970, enterobactin (enterochelin), a triscatechol derivative of a cyclic triserine lactone, has been isolated from *Salmonella typhimurium* and *E. coli* strains. Later, in 2003 a novel siderophore called salmochelin has been isolated from *Salmonella enterica* serotype Typhimurium and uropathogenic *Escherichia coli* strains. Analytical data have shown that salmochelins are enterobactin-related compounds, which contain 2,3-dihydroxybenzoyl-L-serine and glucose connected in a linear (monomeric, dimeric, and trimeric) or cyclic form. The biosynthesis of salmochelins is dependent on the synthesis of enterobactin and the *iroBCDEN* gene cluster. Comparative analyses have shown that salmochelins are not bound to serum albumin, suggesting that salmochelins may play a crucial role in infections produced by *S. enterica* and uropathogenic *E. coli* strains. Salmochelin is taken up by IroN in a TonB-dependent manner. Two hydrolases are involved in salmochelins uptake, IroD and IroE. IroE protein is able to hydrolyze apo- and ferric-salmochelin S4 to salmochelin S2 and ferric-salmochelin S2, respectively. In addition, it was found that uptake of ferric-salmochelin S4 in *E. coli* was dependent on the cleavage by IroE, and that IroC was necessary for the uptake of ferric-salmochelin S2 from the periplasm into the cytoplasm. Finally, the hydrolysis products of salmochelin and yersiniabactin were detected, from uropathogenic *E. coli* strains either by HPLC connected to a fluorescence detector or by thin layer chromatography on cellulose plates. The efficiency of this novel detection method was tested with several clinical UPEC isolates containing the *iro* gene cluster. In all cases the fluorescent hydrolysis product...

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