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Proteomic response of *Streptococcus pneumoniae* to iron limitation

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Abstract

Iron is an essential trace element and involved in various key metabolic pathways in bacterial lifestyle. Within the human host, iron is extremely limited. Hence, the ability of bacteria to acquire iron from the environment is critical for a successful infection. *Streptococcus pneumoniae* (the pneumococcus) is a human pathobiont colonizing symptomless the human respiratory tract, but can also cause various local and invasive infections. To survive and proliferate pneumococci have therefore to adapt their metabolism and virulence factor repertoire to different host compartments. In this study, the response of *S. pneumoniae* to iron limitation as infection-relevant condition was investigated on the proteome level. The iron limitation was induced by application of the iron chelator 2,2'-bipyridine (BIP) in two different media mimicking different physiological traits. Under these conditions, the influence of the initial iron concentration on pneumococcal protein expression in response to limited iron availability