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Small-molecule modulators of thiamine transport in pathogenic bacteria

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Energy coupling factor (ECF) transporters are a class of ATP-binding cassette (ABC) transporters that mediate the uptake of vitamins in prokaryotes. They consist of an energizing module and a substrate-binding protein (S-component). Different S components can interact with the same energizing module. 1. ThiT is the thiamine-specific S-component. 2. Based on the cocrystal structure of ThiT-thiamine (1). 3 we have designed and synthesized thiamine analogues to identify which residues are the key for substrate binding and to elucidate the mechanism of transport.

Biography

Anna K H Hirsch read Natural Sciences at the University of Cambridge and spent her third year at the Massachusetts Institute of Technology. Her Master's project focused on the double conjugate addition of dithiols to propargylic carbonyls under the supervision of Prof. S. V. Ley. She received her PhD in 2008 from the ETH Zurich working on the design and synthesis of the first inhibitors for the kinase IspE under the supervision of Prof. F. Diederich. Subsequently, she joined the group of Prof. Jean-Marie Lehn at ISIS (Strasbourg). Her research interests focus on rational approaches to drug design.

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