

**P040 HflX GTPases: interacting with the translation machinery**  
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Many members of the translation factor-related GTPases interact with the ribosome at various stages, but only a few are conserved in all three domains of life. HflX is one of these universally-spread GTPase families, however, molecular characterization of its members, such as HflX in *Escherichia coli* and PGPL in human, is still lacking. The HflX-homologue of *Sulfolobus solfataricus* has been found to co-fractionate with ribosomal subunits in cell lysates. Interaction has also been detected with purified 50S subunits. Binding of the HflX-GTPase to the 50S subunit does not depend on the presence of non-hydrolyzable GTP-analogs, suggesting that the 50S subunit is not an effector of the HflX-GTPase. Binding to the 50S subunit involves complementary charge interactions most likely via surface-exposed rRNA. The crystal structure of the *S. solfataricus* HflX-GTPase reveals a novel N-terminal “HflX”-domain combined with a C-terminal G-domain. Interdomain interactions control the activity of the G-domain. A positively charged surface on the HflX-domain might be involved in the interaction with the 50S subunit. Overall, our results support a close link between HflX-GTPases with the translation machinery.