

***Bartonella Bacilliformis* Hfq Regulates Small Rnas**

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Bartonella bacilliformis is a facultative bacterial intracellular pathogen of the human circulatory system, causing Carrion's disease. *B. bacilliformis* is transmitted between human hosts by a sand-fly vector, two markedly distinct backgrounds. As such, it presumably requires a high degree of regulation at the genomic level. Hfq, a common RNA-binding protein of bacteria, is present in *B. bacilliformis*, and likely plays a key role in post-transcriptional regulation. Hfq is involved in regulating many processes by choreographing small RNA (sRNA) binding to mRNA targets for transcriptional regulation via specific base pairing interactions. To better understand the role of Hfq in *B. bacilliformis*, the *hfq* gene was cloned into an expression plasmid to generate a His-tagged Hfq fusion protein. The plasmid was then used to transform *E. coli*, which was then induced with IPTG, to produce high quantities of the Hfq protein. The cells were lysed and the Hfq protein was purified by affinity chromatography using a NiNTA column with His tag specificity. Recombinant Hfq was used to generate rabbit polyclonal anti-Hfq antibodies, and specificity was verified by western blots. The anti-Hfq antibody will be utilized to co-immunoprecipitate Hfq and its sRNA / mRNA targets from *B. bacilliformis* lysates. The resulting RNAs will then be used to construct a cDNA library, which in turn will be deep sequenced to generate a list of RNAs that interact with Hfq. Results will directly inform us of the genes that are regulated by Hfq in this potentially life-threatening pathogen.