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Post-transcriptional Regulation of the *xynA* Expression by a Novel mRNA Binding Protein, XaiF

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XaiF, a novel 32 kDa protein encoded by the ORF located in the immediate downstream of the *xynA* gene of *Bacillus stearothermophilus* No. 236, was identified to be the xylanase-specific trans-activator. In this study, the positive effect of XaiF was confirmed to be xylanase-specific, and the results from Northern blot and *in vitro* transcription assays showed that the XaiF increased the *xynA* transcripts at post-transcriptional step. Moreover, analysis of the mRNA decay rate led to the assertion that the XaiF functions to stabilize the *xynA* mRNA. Intriguingly, *in vitro* RNA-protein binding assay and analysis using *gst-xynA* 3'-UTR chimeric gene constructs demonstrated that the XaiF stabilizes *xynA* mRNA by direct binding onto the 3'-UTR of the mRNA.