

The *E. coli* Ferric Uptake Regulation protein, the monomeric and dimeric form and their interaction with DNA

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The Fur protein is involved in the regulation of iron acquisition genes. After metal binding, activated Fur acts as a transcriptional repressor by recognizing and binding to specific sequences, called iron boxes, placed in the promoter region of the genes under iron control. The *E. coli* Fur protein can exist in two forms: an oxidized monomeric form and a dimeric form containing a structural zinc site. Both forms are able to bind DNA with high affinities but only after metal activation. NMR structural studies as well as studies on reactivity of these forms and their metal dependant interconversion have been performed. Several models of the Fur-DNA interaction have been proposed in the literature with different Fur/DNA stoichiometries [1-3]. In order to gain insight on these specific interactions, fluorescence anisotropy and mass spectrometry analyses have been performed and will be also described.

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