Linker Histones Do Not Interact with DNA Containing a Single Interstrand Cross-Link Created by Cisplatin

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During our earlier investigations we have observed a prominent preference of the linker histone H1 for binding to a *cis*-platinated DNA (a synthetic fragment with global type of platination in respect to targets for cisplatin) comparing with unmodified and *trans*-Pt-modified DNA. In the present work we report our recent experimental results on the binding of the linker histones H1 and H5 to a cisplatin-modified synthetic DNA fragment containing a single nucleotide target d(GC/CG) for *inter*-platination. Surprisingly, no preferential binding of linker histones to c*is-inter*-platinated DNA was observed by means of the electromobility-shift assay. The same negative results were obtained with a part of the linker histone molecule suggested to be responsible for DNA-binding – its globular domain. Contrary, the data with another nuclear protein with similar DNA-binding properties as linker histones – HMGB1 – showed a strong afinity for interaction with DNA containing interstrand cross-links.

Key words: Cisplatin, DNA, Linker Histones