Histone H1 Interacts Preferentially with DNA Fragments Containing a Cisplatin-Induced 1,2-Intrastrand Cross-Link

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Cisplatin [*cis*-diamminedichloroplatinum(II) or *cis*-DDP], but not its stereoisomer transplatin, is suggested to be among the most powerful anticancer agents. It is believed that its therapeutic activity results from its interaction with DNA forming *intra*- and *inter*strand cross-links. During our earlier investigations, we have observed a prominent preference of the linker histone H1 for binding to *cis*-platinated DNA (containing several different cross-links along the DNA fragment) compared with unmodified or transplatin-modified DNA. This report presents our recent experimental data obtained by band-shift analysis on the binding of H1 to a cisplatin-modified synthetic 34 bp DNA fragment containing a single target d(GG/CC) for 1,2 *cis-intra*-platination. Results obtained with another nuclear protein with similar DNA-binding properties, HMGB1, are also presented. The experimental data throw light on the precise preference of histone H1 for binding to different types of cisplatin-created cross-links in DNA.

Key words: Cisplatin, DNA, Histone H1