Immunochemical detection of *cis*-platin-DNA adducts in human testicular and bladder tumour cell lines

P. Bedford[1,2], A.M. Fichtinger-Schepman[3], J.R.W. Masters[2] & B.T. Hill[1,2]

[1]*Imperial Cancer Research Fund Laboratories, Lincoln's Inn Fields, London WC2A 3PX;* [2]*Institute of Urology, Endell Street, London WC2H 9AE, UK and* [3]*Medical Biological Laboratory, TNO, 2280 AA Rijswijk, The Netherlands.*

Polyclonal antisera raised to synthetic platinated nucleotides coupled to bovine serum albumin were used to quantitate four Pt-DNA-adducts in DNA extracted from two human teratoma cell lines (SUSA: 833K), a subline derived by fractionated X-irradiation (SUSA-DXR$_{10}$) and a bladder carcinoma cell line (RT112), each exposed for 1 h to 20 $\mu g\,ml^{-1}$ *cis*-platin. Digested DNA was separated on an anion exchange column and adducts measured by competitive ELISA. The following adducts were detected: *cis*-Pt(NH$_3$)$_2$d(pGpG) [Pt-GG], *cis*-Pt(NH$_3$)$_2$d(pApG), monofunctionally platinated DNA: Pt(NH$_3$)$_3$dGMP and an adduct derived from DNA interstrand crosslinks and intrastrand crosslinks between guanines separated by intervening bases: *cis*-Pt(NH$_3$)$_2$d(GMP)$_2$. The major adduct was Pt-GG (70%–80%) and whilst the overall distribution of adducts was similar in all lines, the total amount of platination varied considerably, for example:

Cell line	*Pt-GG (nmol g^{-1} DNA)*
SUSA	294
SUSA-DXR$_{10}$	301
833 K	78
RT112	252

The possibility exists that differences in induction and repair of Pt-DNA adducts might be related to the differential sensitivities of these lines to *cis*-platin.