Electronic Supplementary Material (ESI) for Analyst.

Supplementary materials

A DNA Array based on Clickable Lesion-containing Hairpin Probes for Multiplexed Detection of Base Excision Repair Activities

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Figure S1: Infrared measurements of chloro-functionnalised glass slides and azido-functionnalized glass slides.

FTIR spectroscopy measurements were performed using a multiple internal reflection (MIR) setup consisting of a work platform on which two silicon prism couplers were assembled; the distance between the two prisms was fixed to 6 cm. Two pressure tips supported by a clamping device allowed tight contact between the prisms and the silicon surface. An S-polarized IR beam from a Bruker IFS 55 FTIR was used in the current measurements.

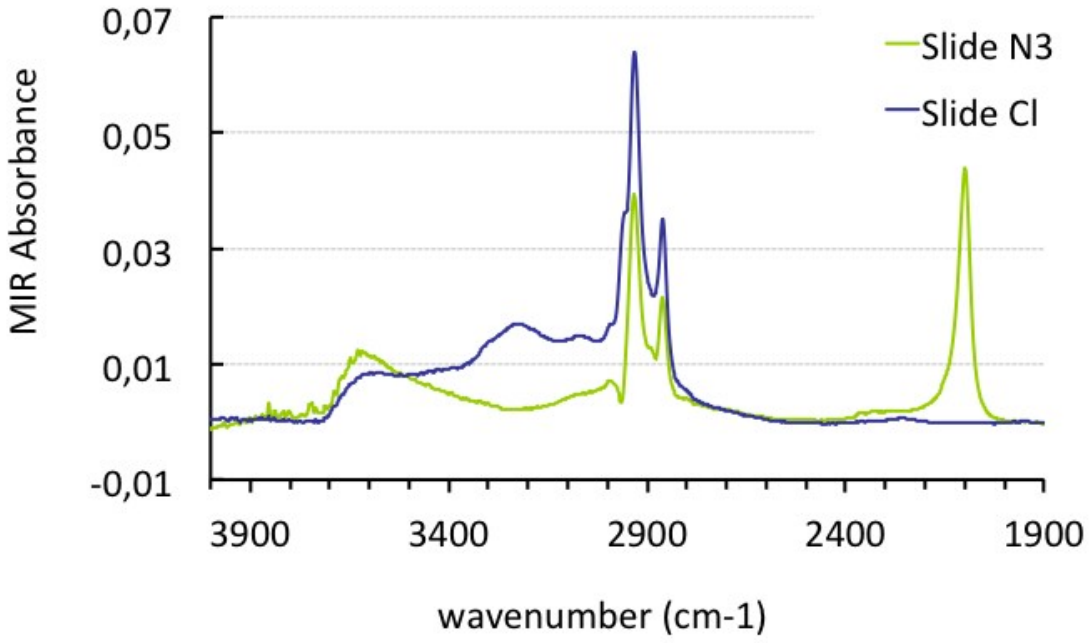

Figure S2: Fluorescence intensity as a function of HP1 probe concentration

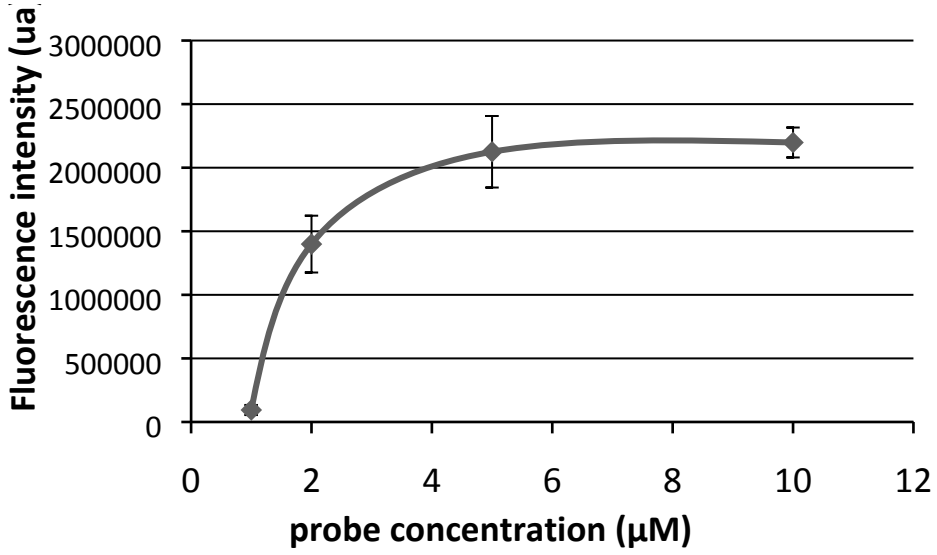

Figure S3: Immobilization kinetics for HP1 (10μM): fluorescence intensities as time function.

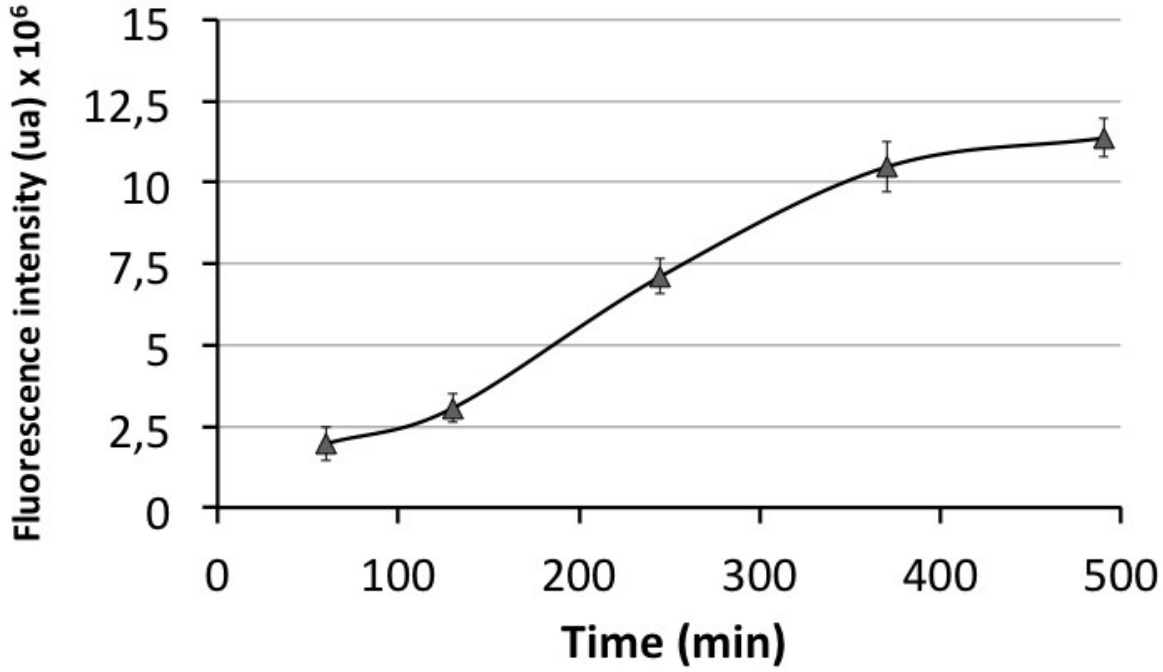

Figure S4: Biochip scheme. The biochip consists in 12 identical and independent blocks each one containing 5 replicates of the probes.

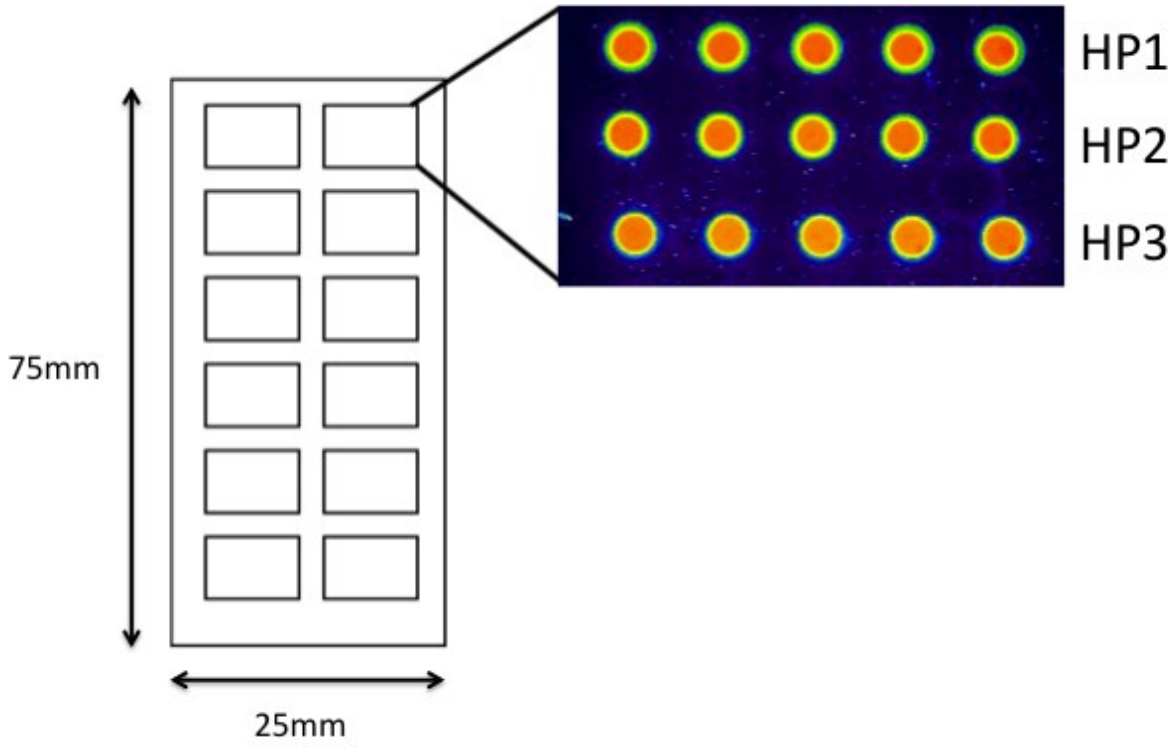

Figure S5: False colour images of slides after functionalization with five replicates of hairpin probes (HP1, HP2 and HP3) **(a)** and after incubation with 200 µg/mL of HeLa nuclear cell extract for 1 h at 37 °C **(b)**.

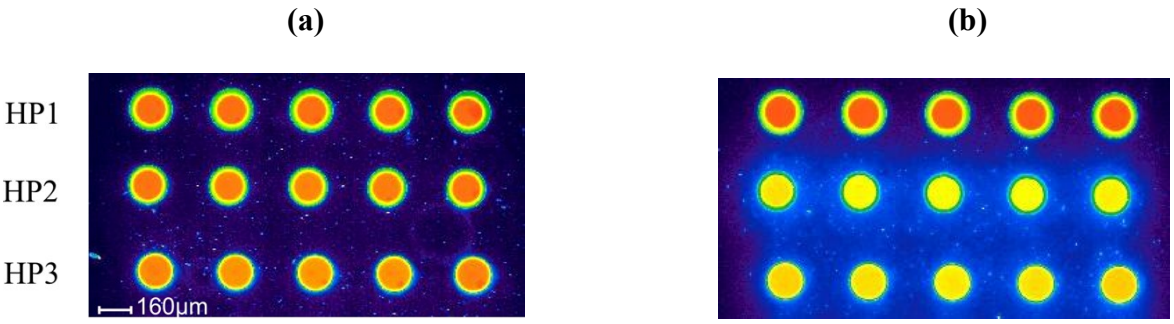

Figure S6: Median fluorescence intensity measured for HP1 probe *(that contains the Pst1 site)* after incubation with Pst1 enzyme (0, 10 or 20 units) or with Nuclease P1 (0 or 1 unit).

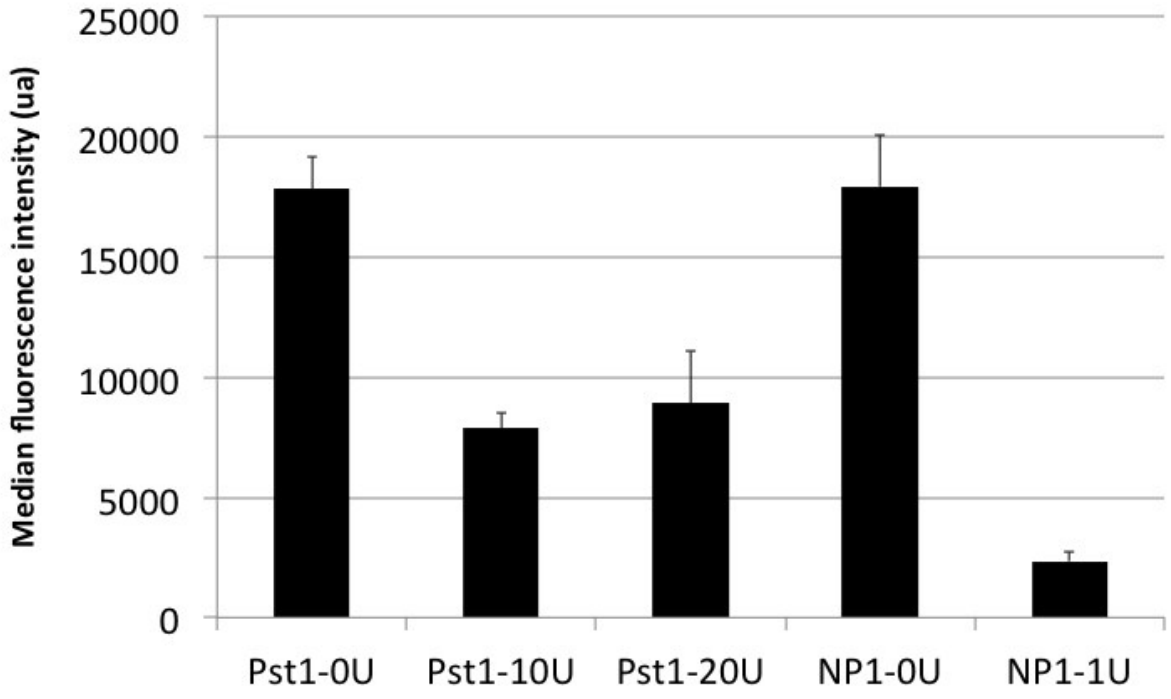

Figure S7: Fluorescence intensity measured for a control probe containing EcoR1 restriction site instead of Pst1 site and the HP1 probe (that contains the Pst1 site) after incubation with a range of Pst1 enzyme (from 0 to 20 units of enzyme).

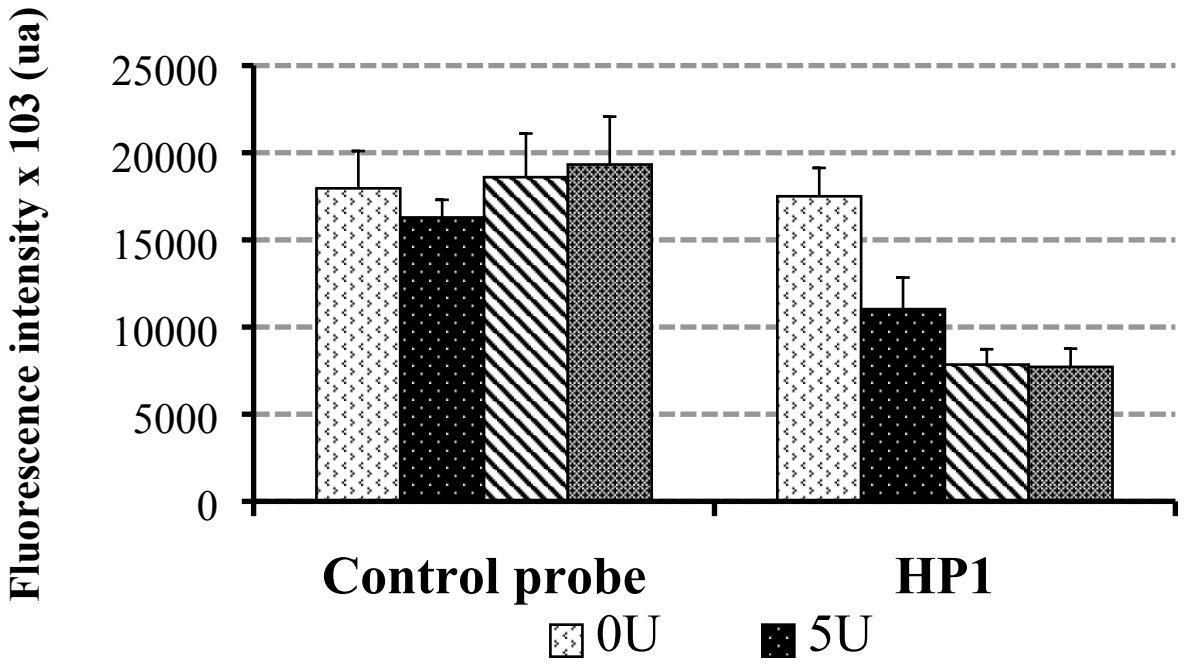

Figure S8: Percent of incision of HP2 probe *(that contains an uracil residue)* and HP3 probe *(that contains a tetrahydrofuran residue)* after incubation with a range of APE1 enzyme.

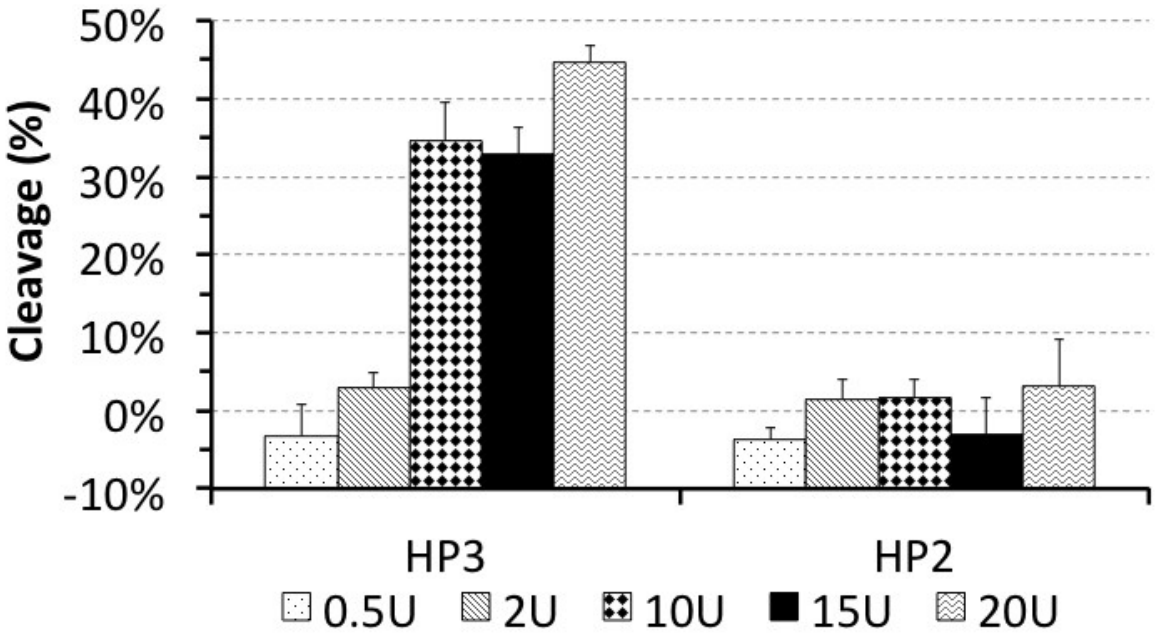

Figure S9: PAGE analysis of HP2 probe after incubation with APE1 enzyme (15 U) in the presence of a range of UNG enzyme.

A) **1:** without UNG and APE1. **2:** Ape1 15U ("+") & UNG 0,1U. **3:** APE1 15U & UNG 0,5U. **4:** APE1 15U & UNG 1U. **5:** APE1 15U & UNG 2U. **6:** APE1 15U & UNG 5U. **7:** APE1 15U &UNG 10U. **8:** APE1 15U ("+") without UNG.

B) Gel quantification

C) Normalized cleavage of HP2 probe (by a range of UNG in presence of 15 U of APE1): comparison between the microarray and the PAGE analysis.

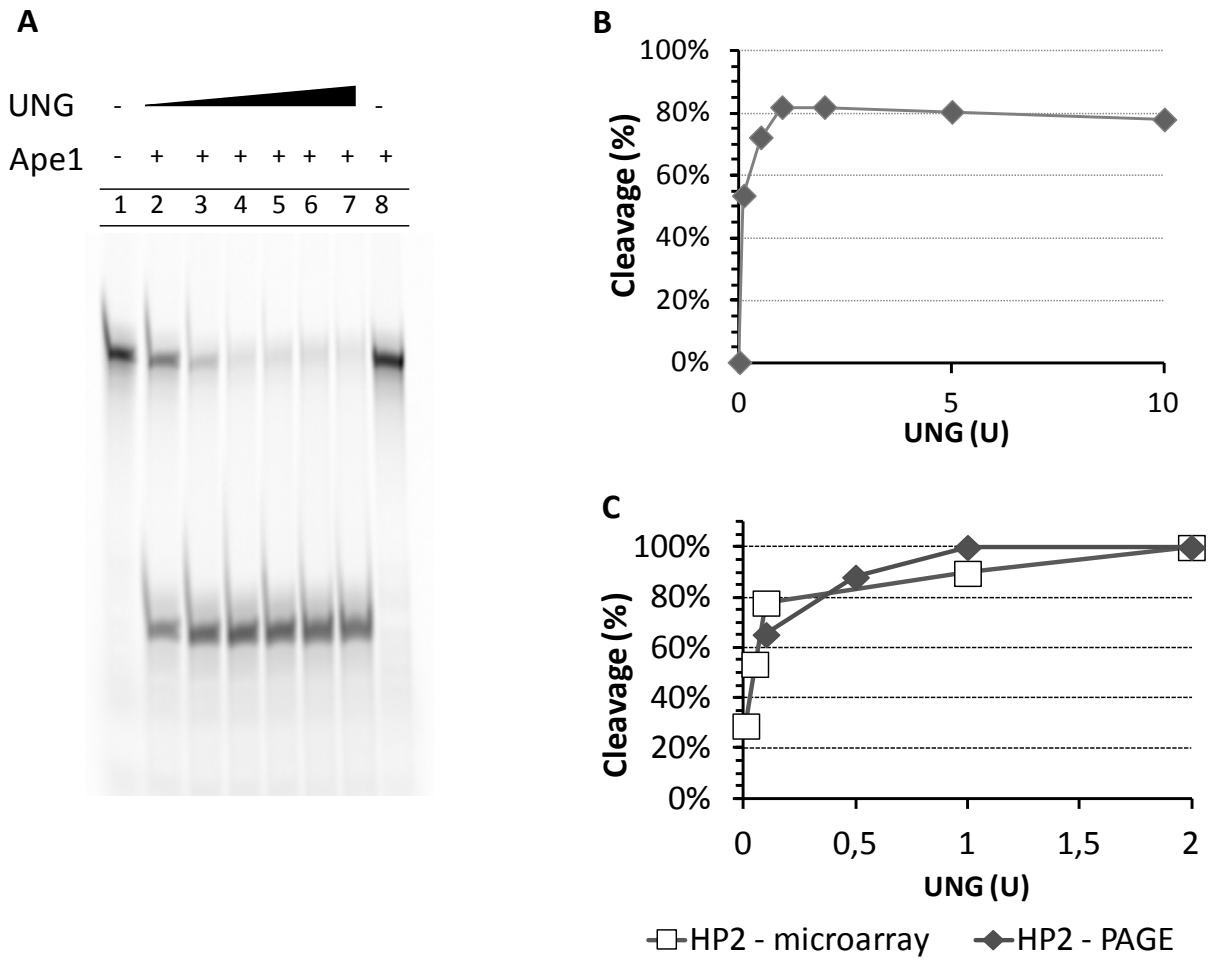

Figure S10: Comparison of the PAGE-based analysis and the microarray-based analysis of HP2 probe cleavage: inhibition with Ugi (A) or Methoxyamine (B).