Electronic Supplementary Material (ESI) for Analyst.


*Supporting Information*

# Analysis of deoxyribonuclease activity by conjugation-free fluorescence polarisation in sub-nanoliter droplets

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# Experimental

## Agarose gel electrophoresis

A 500 ng sample of DNA only, 100 bp DNA ladder from Bioneer (Daejeon, Republic of Korea), 500 ng DNA treated with 3.0 units of *Eco*RV, and 500 ng DNA treated with 1.0 mg/mL DNase 1 were loaded in each well of an 1% agarose gel. DNA samples treated with enzymes were incubated for 20 minutes before loading at room temperature. Electrophoresis was performed at 100 volts. After electrophoresis, all bands were monitored under UV light.

## Supplementary Figures

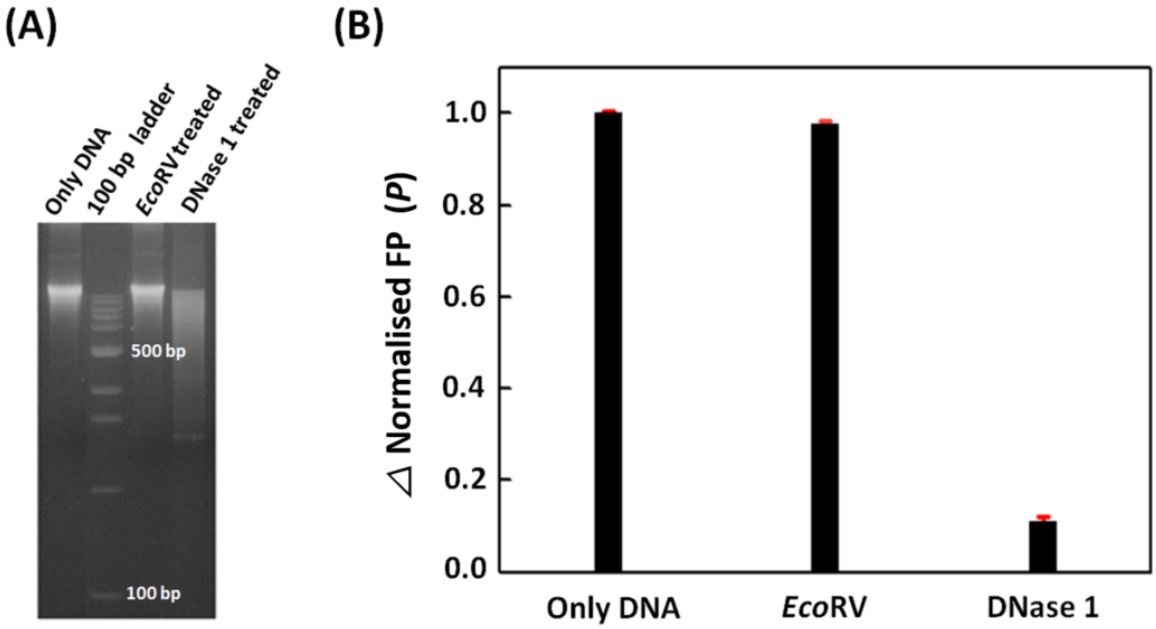


**Fig. S1.** Monitoring of DNA substrate by DNA cleaving enzymes. (A) Representative agarose gel image for the observation of DNA degradation. 500 ng DNA only, 100-bp DNA ladder, DNA incubated with *Eco*RV of 3 units, and DNA treated with 1 mg/mL DNase 1 were loaded into each well as indicated. (B) Normalized polarisation values for each sample from (A). All samples were mixed with 1.0 µM EtBr before FP measurement. Red lines represent error bars.

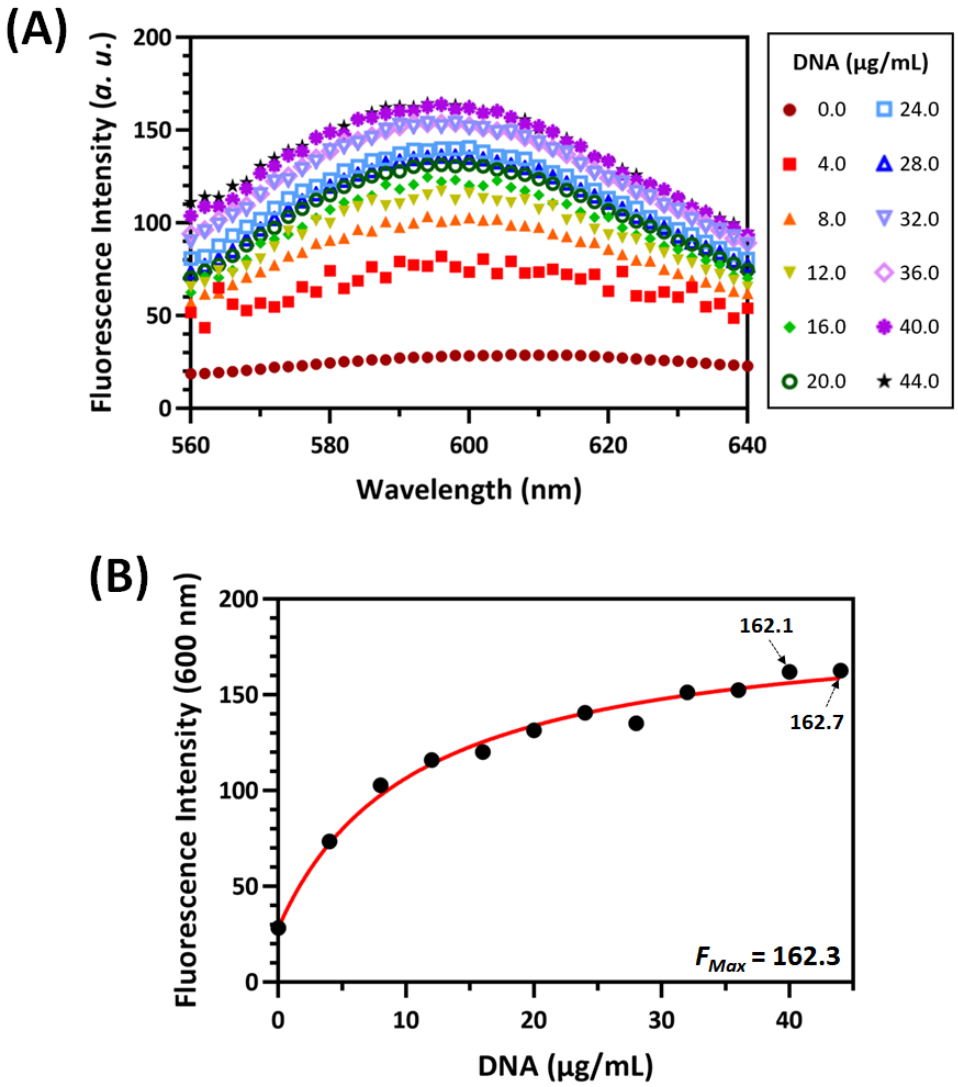


**Fig. S2.** Fluorescent measurements of 1.0 µM EtBr in the presence of DNA (0.0, 4.0, .8.0, 12.0, 16.0, 20.0, 24.0, 28.0, 32.0, 36.0, 40.0, and 44.0 µg/mL) determined using a microplate reader. (A) Fluorescence spectra by EtBr excitation. All microwells were excited at 488 nm and fluorescence detection was performed in the range of 560 nm to 640 nm. (B) Reaction curve for extracting fluorescence intensity values at 600 from (A). The maximum fluorescence intensity ($F_{Max}$) was calculated to be 162.3.