

## Supplementary materials

Figure S1 : Structure of the BIQ compound.

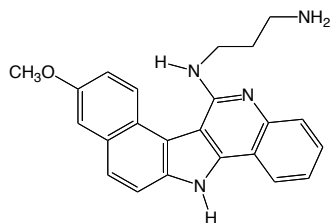


Figure S2 : schematic representation of the counter selection protocol

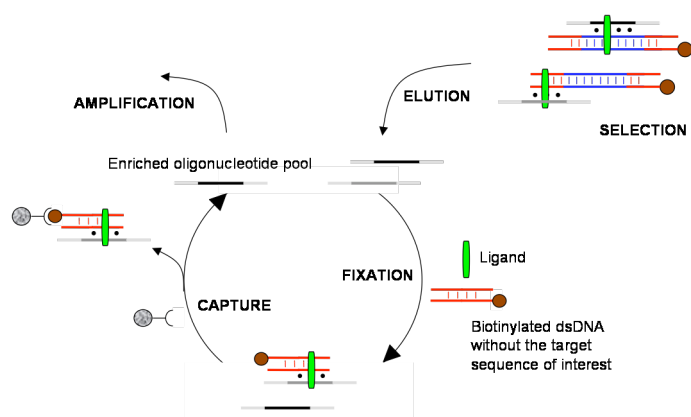


Figure S3 : Mock selection experiment. One round of selection is performed using as starting material the 74-mer GT or the 89-mer NS oligonucleotides or a 1:99 mixture. Gel electrophoresis shows the migration of dsDNA obtained after PCR amplification. Selection was performed in absence or in presence of 6  $\mu$ M of BIQ, as indicated. The presence of ligand did not influence the recovery when only the NS or GT oligonucleotides were present. It improved the proportion of GT oligonucleotide after the selection round performed on the mixture.

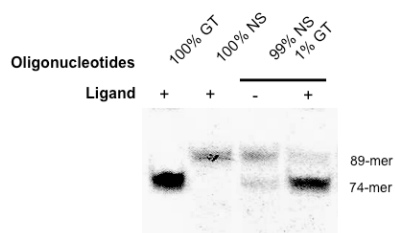


Figure S4 : binding of a sequence from family II (clone 93, shown in black) to the extremity of the biotinylated double-stranded DNA fragment (shown in blue). The complementary sequences are shown in bold.

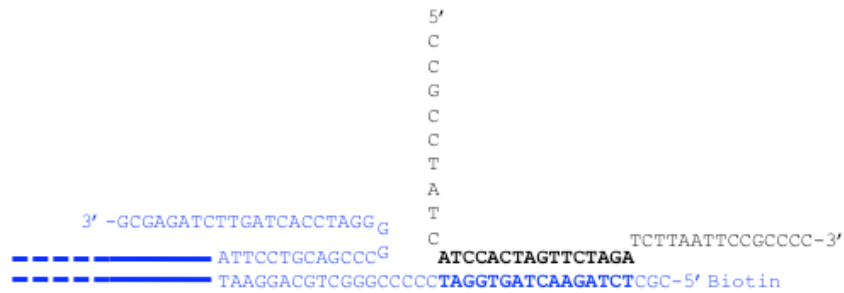


Figure S5 : Aligement of two sequences from family III (shown in black) with the target oligopurine.oligopyrimidine sequence (shown in blue). (clones 02 and 04 shown in blue). The complementary sequences are shown in bold. Clone 02 (A and B) and 04 (C and D) are shown in an antiparallel (A and C) or parallel (B and D) orientation with respect to the oligopurine strand.

