Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry

Supporting Information

Quick Regulation of mRNA Functions by a Few Seconds of Photoirradiation

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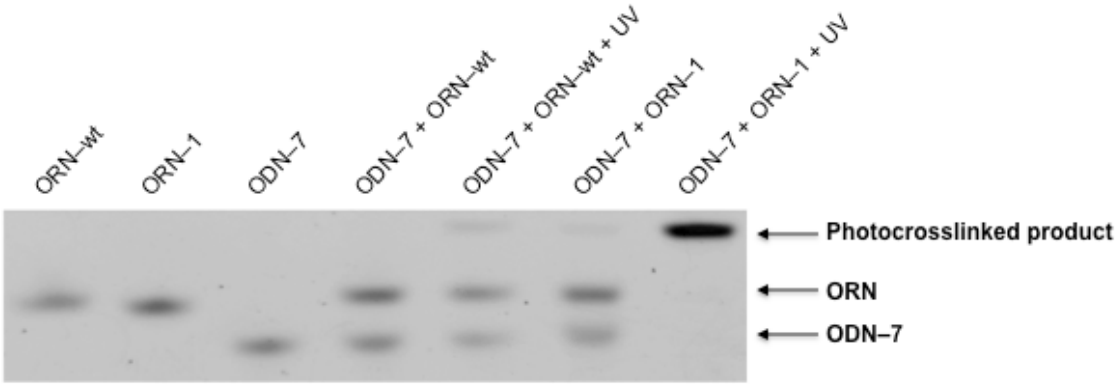

Figure S1. Denatured polyacrylamide gel electrophoresis of the mixture of ODN-7 and ORN-1 before and after the 1 sec photoirradiation. [ODN–7] = [ORN–1] = 1 μM in sodium cacodylate buffer (pH 7.4) containing 100 mM NaCl.

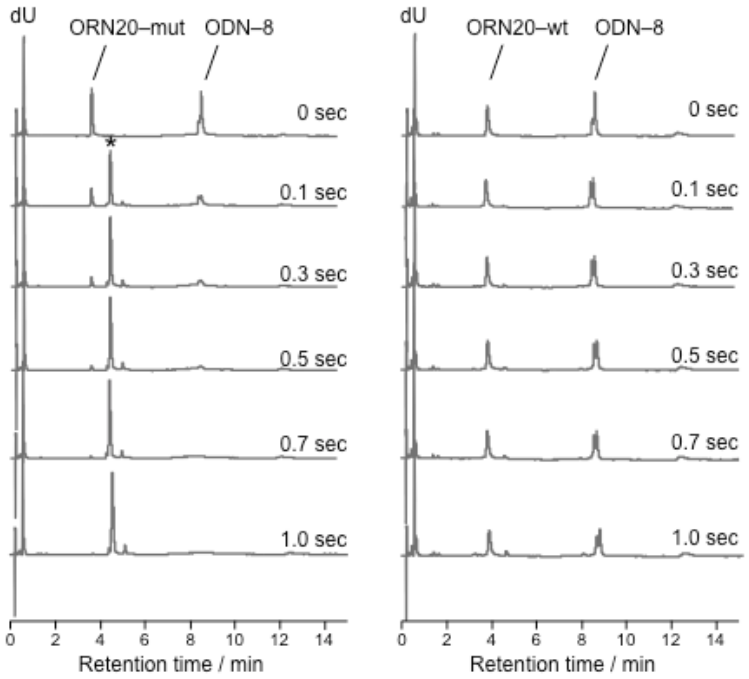

Figure S2. UPLC analysis of the photocrosslinking reaction between ODN–8 and ORN having G12V mutated sequence. [ODN–8] = [ORN] = 2 μM in sodium cacodylate buffer (pH 7.4) containing 100 mM NaCl and 30 μM 2'-deoxyuridine as an internal standard. ORN20–mut, UGGAGCUGUUGGCGUA GGCA; ORN20–wt, UGGAGCUGGUGGCGUAGGCA. Photoirradiation time was indicated on the each chromatograms.

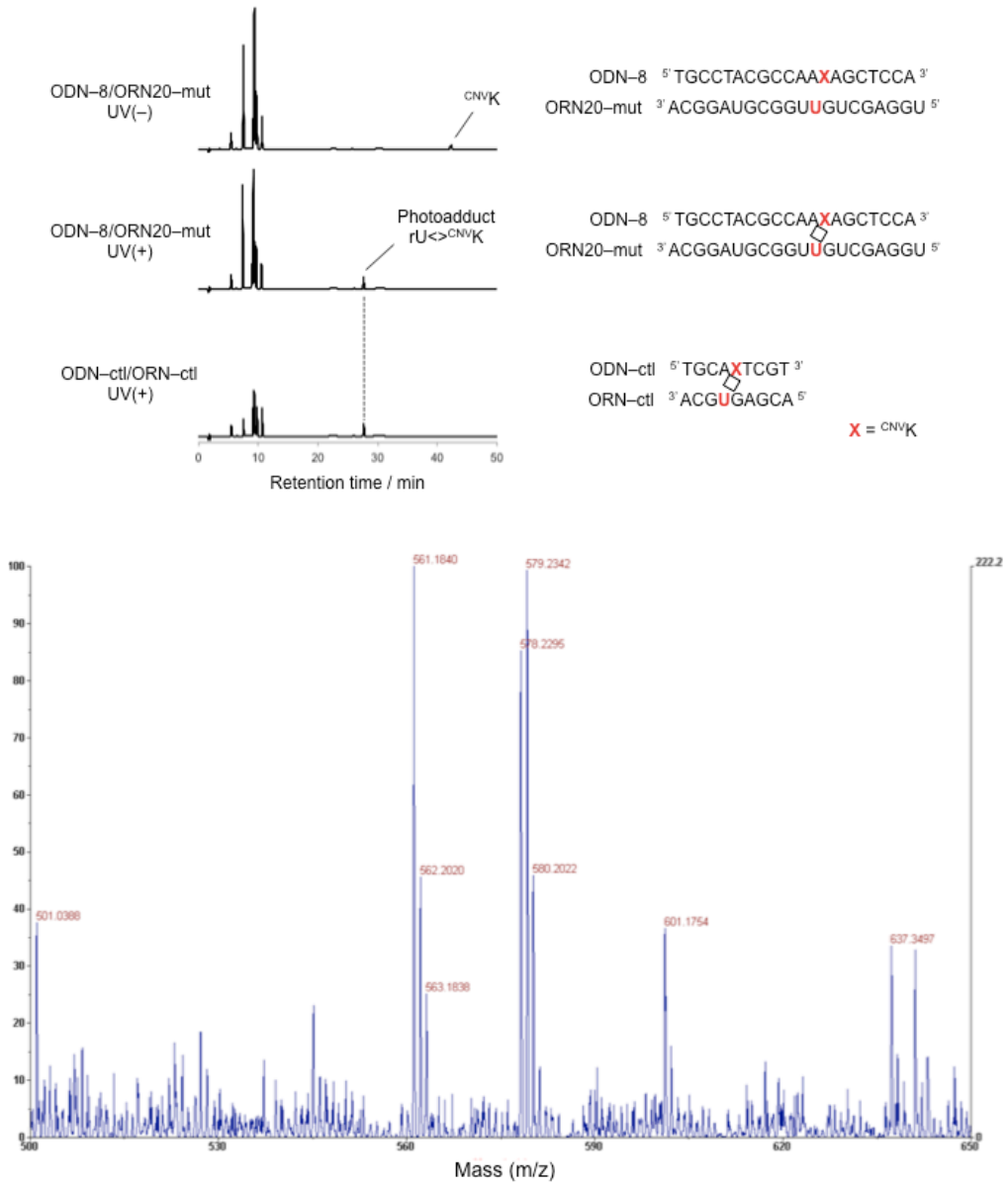

Figure S3. Reversed-phase HPLC analysis of enzyme digested duplexes (a) and MALDI-TOF-MS analysis of the photoadduct (b). ODN/ORN duplexes were treated with P1 nuclease, snake venom phosphodiesterase and calf intestinal alkaline phosphatase, and then subjected to HPLC analysis. ODN-ctl/ORN-ctl was reported that the duplex generate rU<>^{CNV}K photoadduct (Y. Yoshimura et al., *ChemBioChem* 2009, 10, 1473). Peak generated with the photoirradiation (27 min) was collected and analyzed by MALDI-TOF-MS. rU<>^{CNV}K photoadduct; Calcd. for $[(M+H)]^+$, 579.2085;

Found, 579.2342.

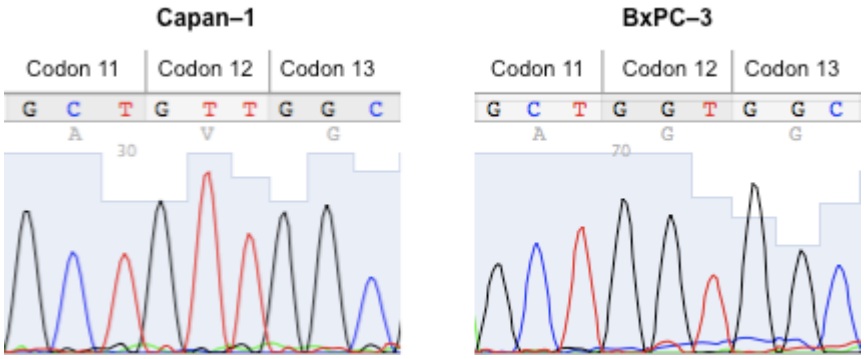

Figure S4. Sequence of K-ras mRNA from Capan–1 (a) and BxPC–3 (b) around codon 12.

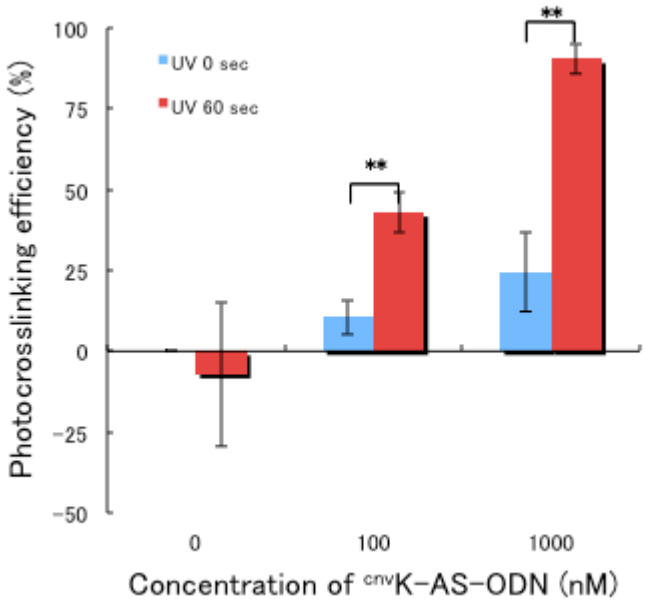

Figure S5. Photocrosslinking efficiency of ODN-11 with VEGF mRNA estimated by inhibition of reverse transcription of VEGF mRNA.