Electronic Supplementary Material (ESI) for Analytical Methods.

Supplementary Material

Development of a highly sensitive sensing platform for T4 polynucleotide kinase phosphatase and its inhibitors based on WS_2 nanosheet

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Figure S1. Values of the ζ potential for WS_2 nanosheets.

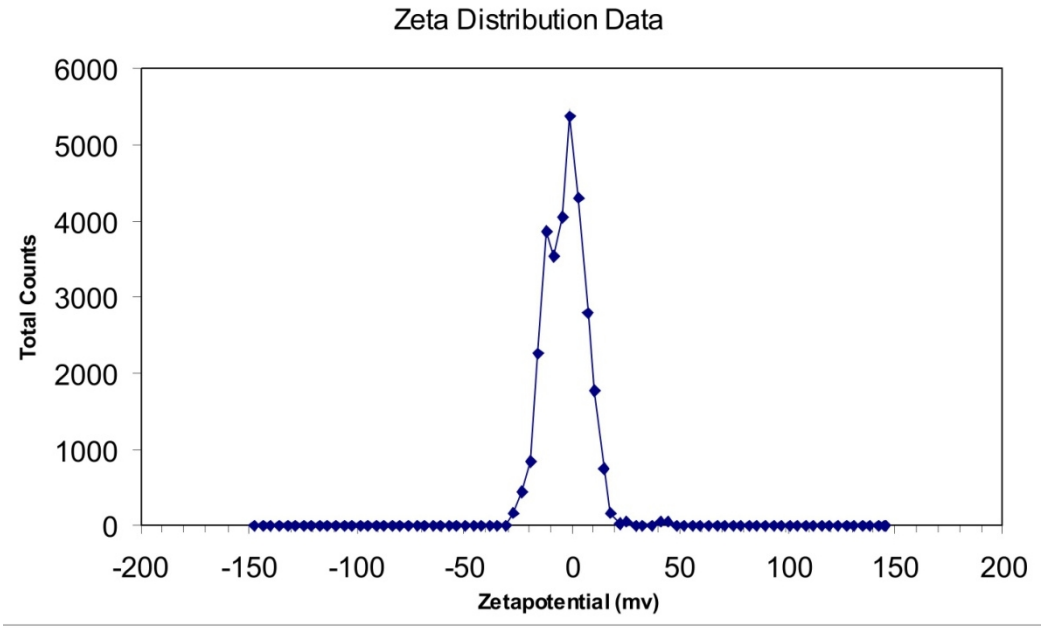

Figure S2. (A) Comparison of XRD patterns of bulk WS_2 and WS_2 nanosheets.

(B) Typical TEM image of prepared WS_2 nanosheets and photograph of a typical chemically exfoliated WS_2 suspension in water.

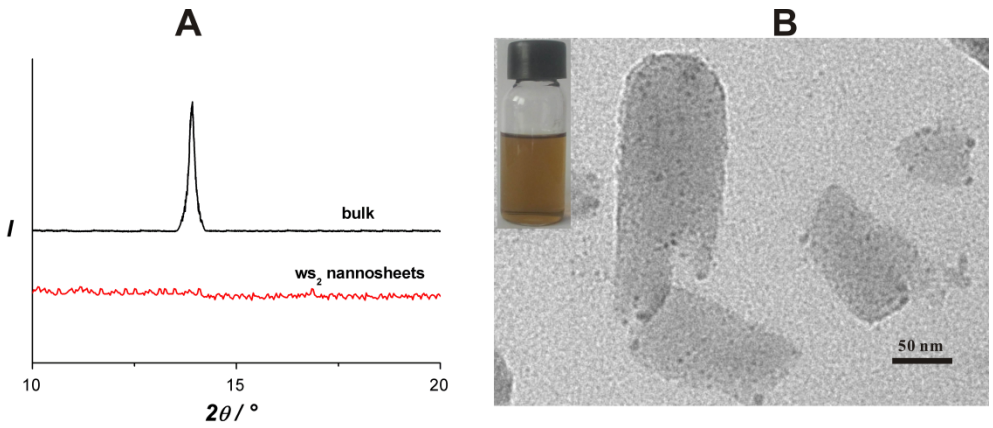

Figure S3. Fluorescence intensity histogram of P1 (black histogram) and P1+ T4 PNKP (gray histogram) in the presence of 0, 0.5, 1, 2, 3, and 5 μg mL^{-1} WS_2 nanosheets (P1 50 nM).

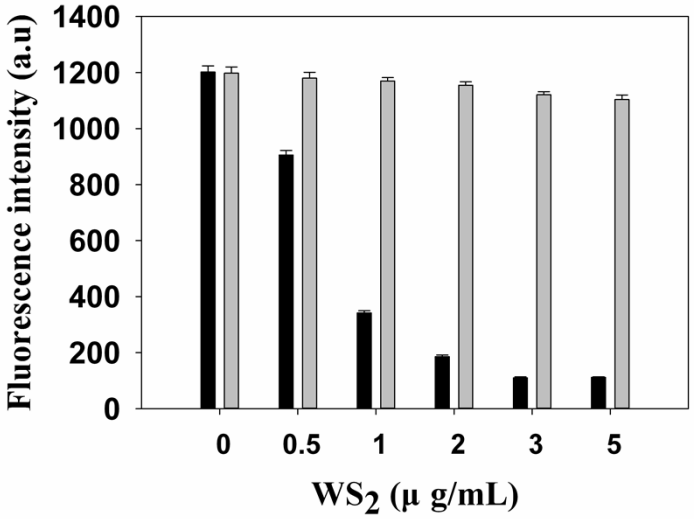

Figure S4. Optimization of the concentration of P1 for assaying T4 PNKP. F/F_0 is defined as the ratio of fluorescence peak intensity at 520 nm from 20 U/mL T4 PNKP (F) to that from no addition of T4 PNKP (F_0).

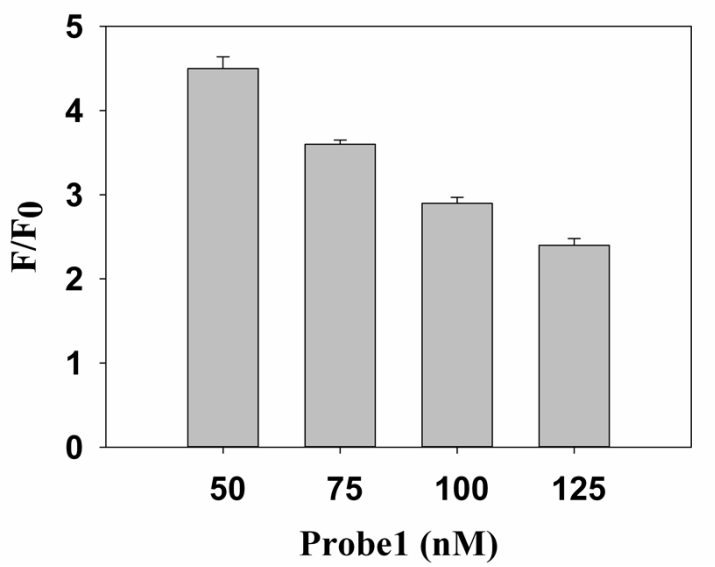

Figure S5. (A) Optimization of the reaction time. (B) Optimization of KF polymerase concentration. (C) Optimization of dNTPs concentration. The relative fluorescence change is defined as the ratio of fluorescence peak intensity at 520 nm from T4 PNKP (50 U/mL) to that from no addition of T4 PNKP. (P1 50 nM, WS_2 3 μg mL^{-1}).

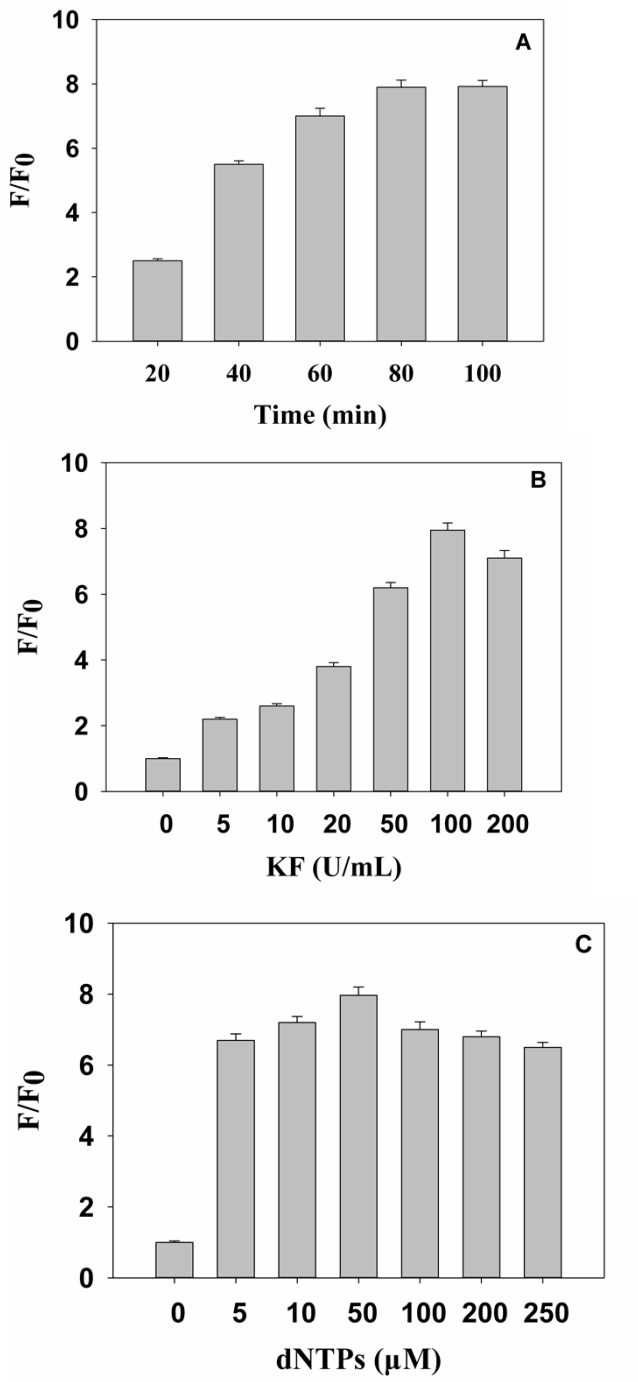

Figure S6. (A) The fluorescence intensity with different activity units of T4 PNKP in reaction buffer containing 1% (v/v) cell extracts. (B) The dependence of fluorescence intensity on T4 PNKP concentration in reaction buffer containing 1% (v/v) cell extracts. The concentration of P1 was 50 nM. The error bars represented for standard deviation (SD) across three repetitive experiments.