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Electronic Supplementary Information

Polyvinylpyrrolidone Functionalized rGO/Bi₂S₃ Nanocomposite as A Near-infrared Light-responsive Nanovehicle for Chemo-photothermal Therapy of Cancer

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Fig. S1 AFM image of GO nanosheets.



Fig. S2 SEM image of PVP-rGO/Bi₂S₃ nanocomposite.



Fig. S3 EDX spectrum of PVP-rGO/Bi₂S₃ nanocomposite.



Fig. S4 Raman spectra of GO and PVP-rGO/Bi₂S₃ nanocomposite, respectively.



Fig. S5 Photo of PVP-rGO/Bi₂S₃ nanocomposite dispersed in H_2O , PBS, DMEM and FBS, respectively. (From left to right).



Fig. S6 TGA curve of PVP, Bi₂S₃ NPs, and PVP-rGO/Bi₂S₃ nanocomposite, respectively.



Fig. S7 (a) Photothermal effect of irradiation of PVP-rGO/Bi₂S₃ nanocomposite dispersion with the NIR laser .The laser was shut off after irradiation for 10 min. **(b)** Plot of cooling period (after 1400s) versus -Ln(θ).



Fig. S8 Cell viabilities of BEL-7042 cells treatment with PVP-rGO/Bi₂S₃ nanocomposite in various concentrations.



Fig. S9 Cell viabilities of HUVECs treatment with Bi_2S_3 NPs and GO, respectively, in various concentrations.

Table S1 Result of ICP-MS.

Sample	1#	2#	3#
V _{total} (mL)	3	3	3
С _{ві} (µg/mL)	11.12	10.91	12.40
m _{Bi2S3} (μg)	13.77	13.42	15.25
W (%)	62.16%	61.33%	63.89%