Supporting Information

WSe$_2$ few layers with enzyme mimic activity for high-sensitive and high-selective visual detection to blood glucose

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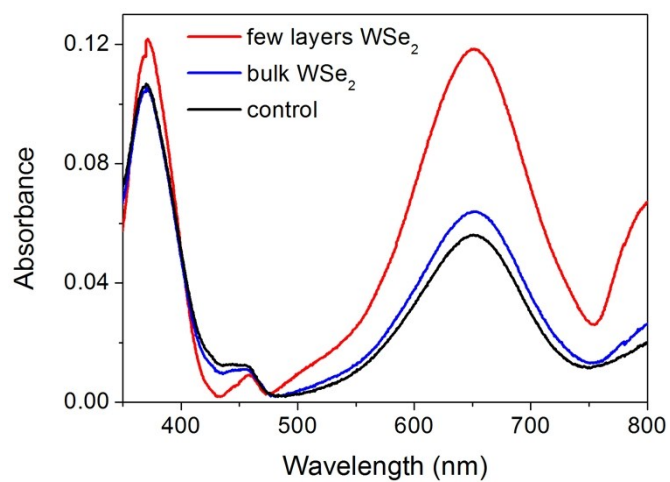
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Figure S1. The peroxidase-like activity of WSe_2 nanosheets show thickness-dependence. Experiments were carried out using 0.1 mg few-layers or bulk WSe_2 in a reaction volume of 1 ml, in acetate buffer, with 0.5 mM TMB and 50 mM H_2O_2 as substrates. Control experiment without WSe2 for experiment was perform.
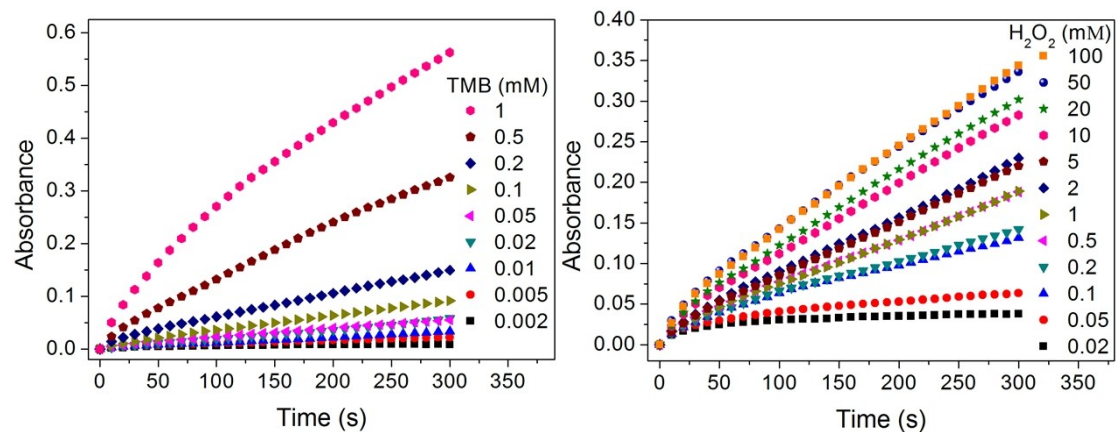
Figure S2. (a) The corresponding time dependent absorbance changes of apparent steady-state kinetic study in the presence of different concentrations of TMB. (b) The corresponding time dependent absorbance changes of apparent steady-state kinetic study in the presence of different concentrations of H_2O_2.
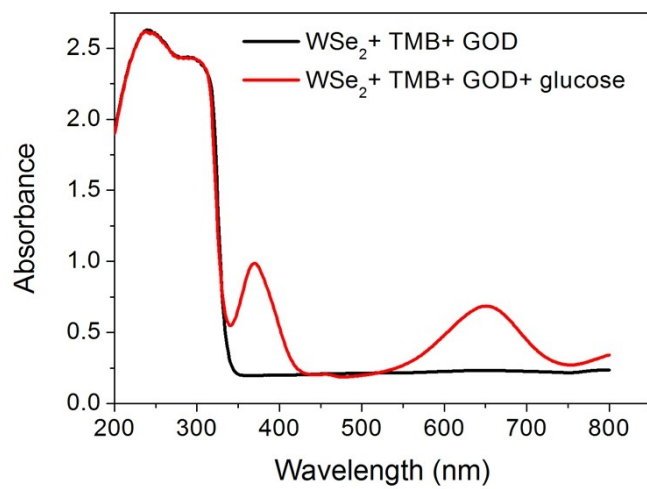
Figure S3. UV-vis absorbance spectrum of the WSe$_2$-TMB-GOD mixed solution in the absence and in the presence of glucose.

Table S1. Comparison of the kinetic parameters of WSe$_2$ nanosheets and other nanozyme. K$_m$ is the Michaelis constant, V$_{max}$ is the maximal reaction velocity.

Catalyst	Substrate	K$_m$ (mM)	V$_{max}$ (10^{-8} M s^{-1})	References
Fe$_3$O$_4$	TMB	0.098	3.44	18
	H$_2$O$_2$	154	9.78	
Graphene oxide	TMB	0.0237	3.45	25
	H$_2$O$_2$	3.99	3.85	
MnO$_2$	TMB	0.04	578	26
	H$_2$O$_2$	0.12	5.71	
Au	TMB	0.00253	6.23	27
	H$_2$O$_2$	25.3	7.21	
MoS$_2$	TMB	0.525	4.29	28
	H$_2$O$_2$	0.0116	5.16	
Fe-Co	TMB	1.79	45.6	29
	H$_2$O$_2$	0.06	13.2	
WSe$_2$ nanosheets	TMB	0.433	1.43	This work
	H$_2$O$_2$	19.53	2.22	