

## Supplementary Data

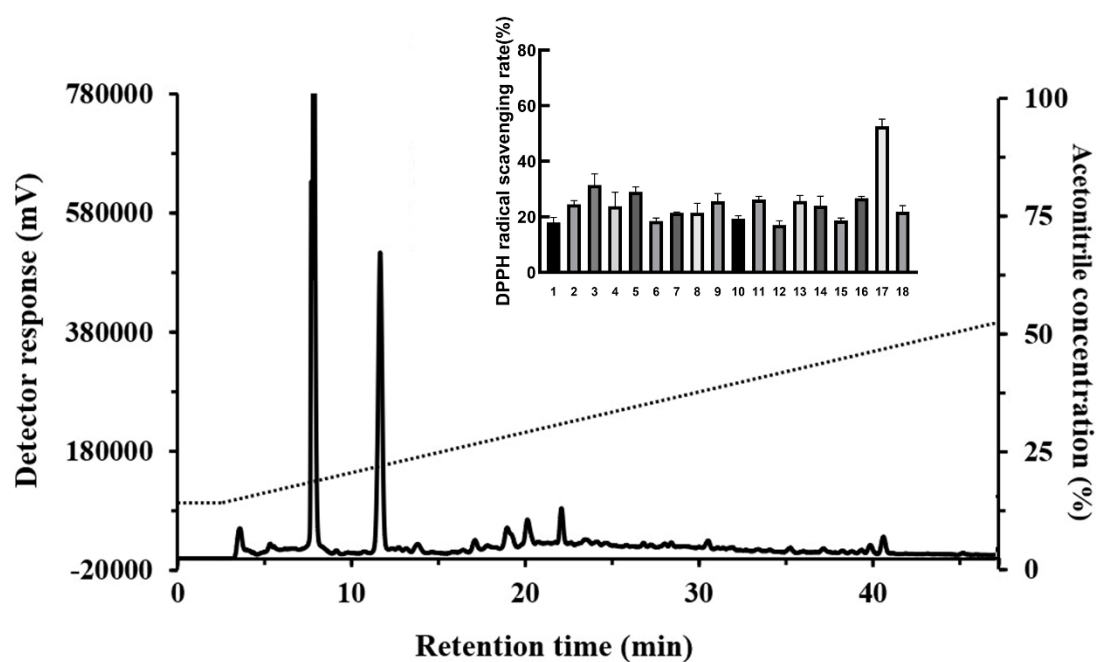


Fig. S1. RP-HPLC chromatograms of crude extracts (< 3 KDa) of fermented mycelium of *Ganoderma lingzhi* and the scavenging rate of DPPH radicals from different fractions.

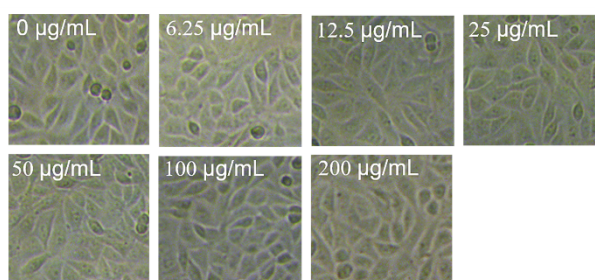


Fig. S2. Effect of GLP4 on the growth morphology of HUVECs. HUVECs were treated with different concentrations of GLP4 (0, 6.25, 12.5, 25, 50, 100, 200 µg/mL) for 24 h, and photographed by microscopy.

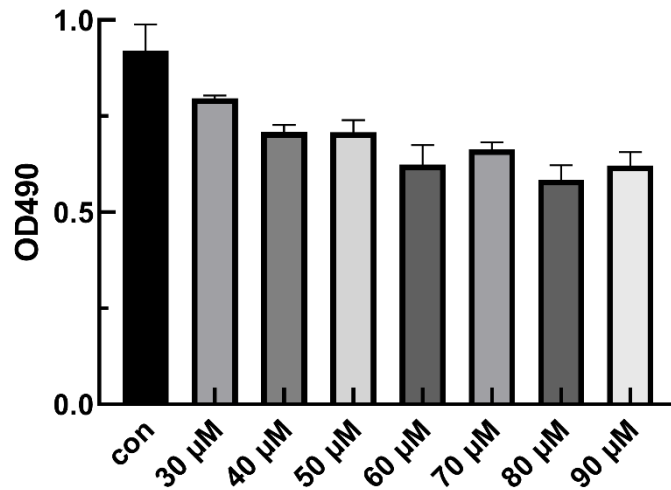


Fig. S3. Effects of different concentrations of H<sub>2</sub>O<sub>2</sub> on HUVECs. HUVECs were treated with different concentrations of H<sub>2</sub>O<sub>2</sub> (0, 30, 40, 50, 60, 70, 80, 90 μM) for 24 h, and cell viability was determined by the MTS assay.

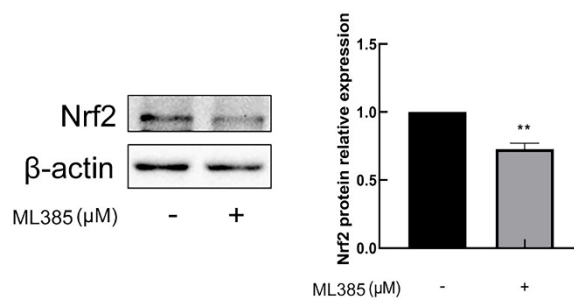


Fig. S4. The effect of Nrf2 inhibitor ML385 on Nrf2 protein expression level. HUVECs were added Nrf2 inhibitor ML385 and Nrf2 protein expression was tested by Western blotting in HUVECs. \*\* (p<0.01).

Table S1 HOMO and LUMO of QLVP and QLDL

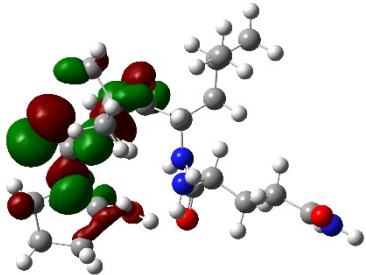
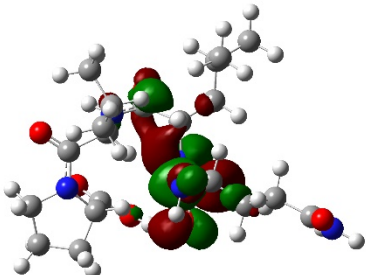
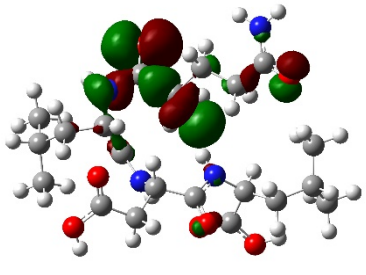
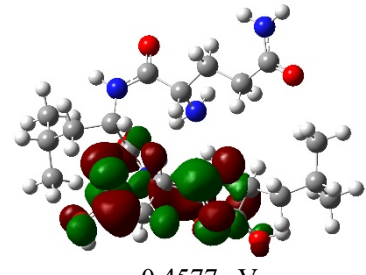
Peptide	HOMO	LUMO	$\Delta E$
QLVP	 -6.5941 eV	 -0.5684 eV	6.0257 eV
QLDL	 -6.6371 eV	 -0.4577 eV	6.1794 eV

Table S2 Some of possible target proteins captured by GLP4 using LC-MS/MS

Uniprot ID	Protein name	Abbreviation
P22234	Multifunctional protein ADE2 OS=Homo sapiens OX=9606 GN=PAICS PE=1 SV=3	PUR6
P53396	ATP-citrate synthase OS=Homo sapiens OX=9606 GN=ACLY PE=1 SV=3	ACLY
Q92945	Far upstream element-binding protein 2 OS=Homo sapiens OX=9606 GN=KHSRP PE=1 SV=4	FUBP2
P42285	Exosome RNA helicase MTR4 OS=Homo sapiens OX=9606 GN=MTREX PE=1 SV=3	MTREX
Q8NHW5	60S acidic ribosomal protein P0-like OS=Homo sapiens OX=9606 GN=RPLP0P6 PE=5 SV=1	RLA0L
Q13263	Transcription intermediary factor 1-beta OS=Homo sapiens OX=9606 GN=TRIM28 PE=1 SV=5	TIF1B
Q96HS1	Serine/threonine-protein phosphatase PGAM5, mitochondrial OS=Homo sapiens OX=9606 GN=PGAM5 PE=1 SV=2	PGAM5
P51114	Fragile X mental retardation syndrome-related protein 1 OS=Homo sapiens OX=9606 GN=FXR1 PE=1 SV=3	FXR1
Q9P0W8	Spermatogenesis-associated protein 7 OS=Homo sapiens OX=9606 GN=SPATA7 PE=1 SV=3	SPAT7
Q9NR30	Nucleolar RNA helicase 2 OS=Homo sapiens OX=9606 GN=DDX21 PE=1 SV=5	DDX21
UBP10	Ubiquitin carboxyl-terminal hydrolase 10 OS=Homo sapiens OX=9606 GN=USP10 PE=1 SV=2	UBP10
Q86YR5	G-protein-signaling modulator 1 OS=Homo sapiens OX=9606 GN=GPSM1 PE=1 SV=2	GPSM1
Q92614	Unconventional myosin-XVIIIa OS=Homo sapiens OX=9606 GN=MYO18A PE=1 SV=3	MY18A
P15559	NAD(P)H dehydrogenase [quinone] 1 OS=Homo sapiens OX=9606 GN=NQO1 PE=1 SV=1	NQO1
P22102	Trifunctional purine biosynthetic protein adenosine-3 OS=Homo sapiens OX=9606 GN=GART PE=1 SV=1	PUR2
O43524	Forkhead box protein O3 OS=Homo sapiens OX=9606 GN=FOXO3 PE=1 SV=1	FOXO3
P21802	Fibroblast growth factor receptor 2 OS=Homo sapiens OX=9606 GN=FGFR2 PE=1 SV=1	FGFR2
Q14444	Caprin-1 OS=Homo sapiens OX=9606 GN=CAPRIN1 PE=1 SV=2	CAPR1
Q9H0C2	ADP/ATP translocase 4 OS=Homo sapiens OX=9606 GN=SLC25A31 PE=1 SV=1	ADT4