Article title: Activation of Atg7-dependent autophagy by a novel inhibitor of the Keap1-Nrf2 protein-protein interaction from *Penthorum chinense* Pursh. attenuates 6-hydroxydopamine-induced ferroptosis in zebrafish and dopaminergic neurons

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The homo siRNAs sequences

Table S1 The homo siRNAs sequences

Primer name (orientation)	Sequences
Nrf2-sense	GGAACAGAUGGAGUCGGAUTT
Nrf2-antisense	AUCCGACUCCAUCUGUUCCTT
HO-1-sense	GGGUGAUAGAAGAGGCCAATT
HO-1-antisense	UUGGCCUCUUCUAUCACCCTT
Keap1-sense	CCAGATGCTATCTTTGGGGA
Keap1-antisense	UUGACCAGGUAGUCCUUGCTT
p62-sense	GGAACAGAUGGAGUCGGAUTT
p62-antisense	AUCCGACUCCAUCUGUUCCTT
Atg7-sense	GCGUGAGACACAUCACATT
Atg7-antisense	UGUGAUGUGUCUCACGCTT

The detailed docking information

Table S2. The docking detailed information between Keap1 kelch domain and twelve main compounds of *Penthorum chinense* Pursh

Molecules	Docking scores (kcal/mol)
Th A	-158.04
PHG	-151.83
PGHG	-150.76
QUE	-109.41
ISQ	-108.53
KAE	-107.36
EA	-103.04
CAT	-101.20
AST	-100.84
BCA	-99.56
EPI	-97.34
GA	-78.90

Note:

Th A: thonningianin A; PHG: Pinocembrin-7-O-[4'',6''-hexahydroxydiphenoyl]-glucoside; PGHG:Pinocembrin-7-O-[3′′-O-galloyl-4′′,6′′-(S)-hexahydroxydiphenoyl]-β-D-glucoside; QUE: quercetin; ISQ: isoquercitin; KAE: kaempferol; EA: ellagic acid; CAT: catechin; AST: astragalin; BCA: brevifolin carboxylic acid; EPI: epicatechin

Reagents

CCK-8 kit, Thonningianin A (Th A), Zn-protoporphyrin (ZnPP), and Brusatol were bought from Meilun Biotechnology (Dalian, China). JC-10 fluorescence probe was bought from Solarbio Life Science (Beijing, China). Immunoprecipitation kit was bought from Proteintech Group, Inc (Wuhan, China). Liperfluo and FerroOrange were bought from Dojindo Lab (Kumamoto, Japan). Lactate Dehydrogenase (LDH),

Maleicdialdehyde (MDA), glutathione (GSH), and DCFH-DA assay kits were bought from Nanjing Jiancheng Bioengineering Institute (Nanjing, China). Ferrostatin-1 (Fer) were bought from Topscience (China, Shanghai). Bicinchoninic acid (BCA) Protein Quantification Kit was bought from Thermo Scientific (Madison, USA). Dulbecco's modified Eagle's medium (DMEM) medium was bought from HyClone Laboratories (Logan, USA). Fetal bovine serum was purchased from CELL-BOX Biological Products (HK). TransIntroTM EL Transfection Reagent was bought from TransGen Biotech (Beijing, China). Radio-Immunoprecipitation Assay (RIPA) cell lysis buffer, Nuclear and Cytoplasmic Extraction Kit were bought from CWBIO (Beijing, China). Antibodies against Acyl-CoA synthetase long-chain family member4 (ACSL4, Abways, CY10198, 1:1000), FITC Fluorescent Secondary Antibody Conjugates, Transferrin (Abways, CY5396, 1:1000), Atg7 (Abways, CY5658, 1:10000), LC3B (Abways, CY5992, 1:1000), Beclin1 (Abways, CY5092, 1:1000), GPX4 (Abways, CY6959, 1:1000), Nrf2 (Abways, CY5136, 1:1000), α-syn (Affinity Biosciences, AF0402, 1:1000), HO-1 (Abways, CY5113, 1:1000), GAPDH (Abways, AB0036, 1:5000), β-Actin (Affinity Biosciences, AF7018, 1:5000) were bought from Abways Technology or Affinity Biosciences. Antibodies against p62 (18420-1-AP, 1:2000), Keap1 (10503-2-AP, 1:3000), Lamin B1 (12987-1-AP, 1:3000) were bought from Proteintech Group, Inc (Wuhan, China).

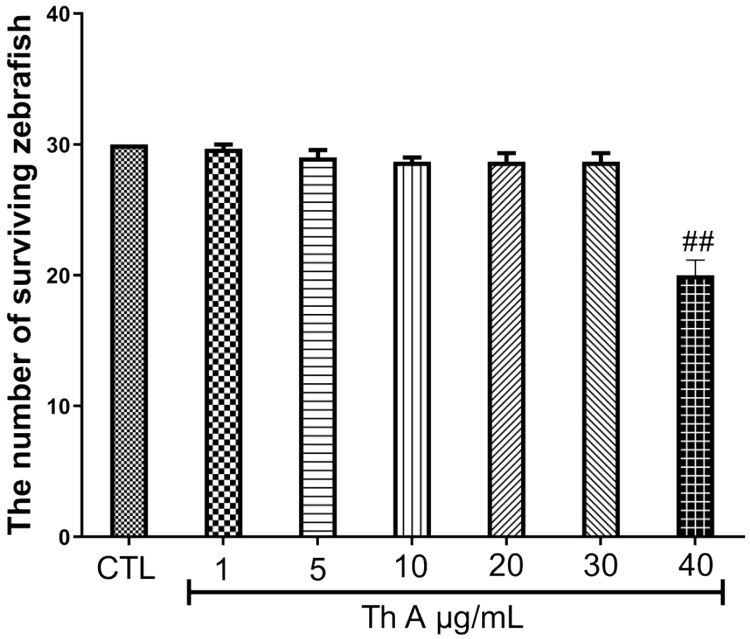

Fig.S1 Toxicity assay of zebrafish induced by Th A. 4 dpf of zebrafish larvae were treated with Th A(1-40 μg/mL) for 2 days. Then, The number of survival Zebrafish was recorded. The values are shown as the means ± SEM, n = 3 for each group; $^{\#\#}p < 0.01$ versus CTL.