

Table S1 Organ/tissue selenium concentrations in selenious acid-administered rat. Selenious acid in saline was orally administered to 6-week old male mice at a dose of 1.5 $\mu\text{gSe kg}^{-1}$ -body weight day^{-1} for two weeks. Data present mean \pm standard error. ($n = 4$)

Organ/tissue	Selenium concentration ($\mu\text{gSe g}^{-1}$ -organ or tissue)	
	Non-administered (regular diet only)	SA-administered
Heart	0.26 \pm 0.056	0.51 \pm 0.16
Skeletal muscle	0.15 \pm 0.024	0.18 \pm 0.011
Brain	0.12 \pm 0.018	0.27 \pm 0.019
Liver	0.60 \pm 0.14	2.95 \pm 0.47
Kidney	0.82 \pm 0.11	13.1 \pm 4.24
Plasma	0.30 \pm 0.18	0.80 \pm 0.11
Red blood cell	0.19 \pm 0.062	1.53 \pm 0.69
Whole blood	0.49 \pm 0.24	1.64 \pm 0.66

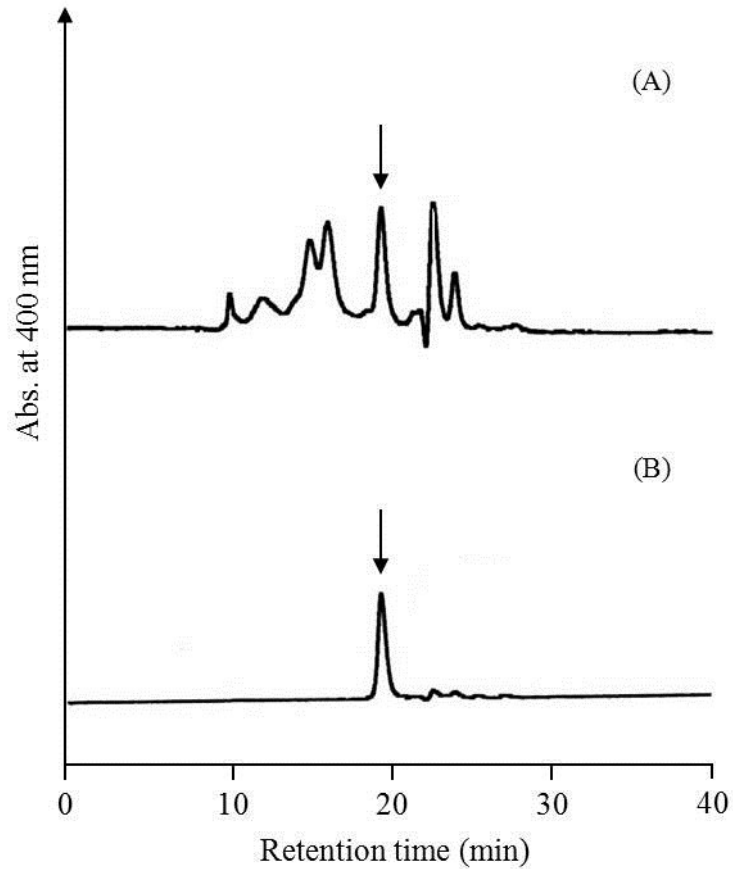


Fig. S1 Gel permeation chromatographic analysis of rat heart cell lysate before (A) and after (B) purification by ultrafiltration and dialysis. Column: TSKgel G3000SW 300×7.5 i.d. mm (10 μm), Mobile phase: 0.1 M sodium sulfate containing 0.1 M phosphate buffer (pH 6.5), Flow rate: 0.5 mL min⁻¹, Detection: Absorbance at 400 nm, Injection volume: 10 μL. Downward arrows in the panel point peaks assigned to Mb.

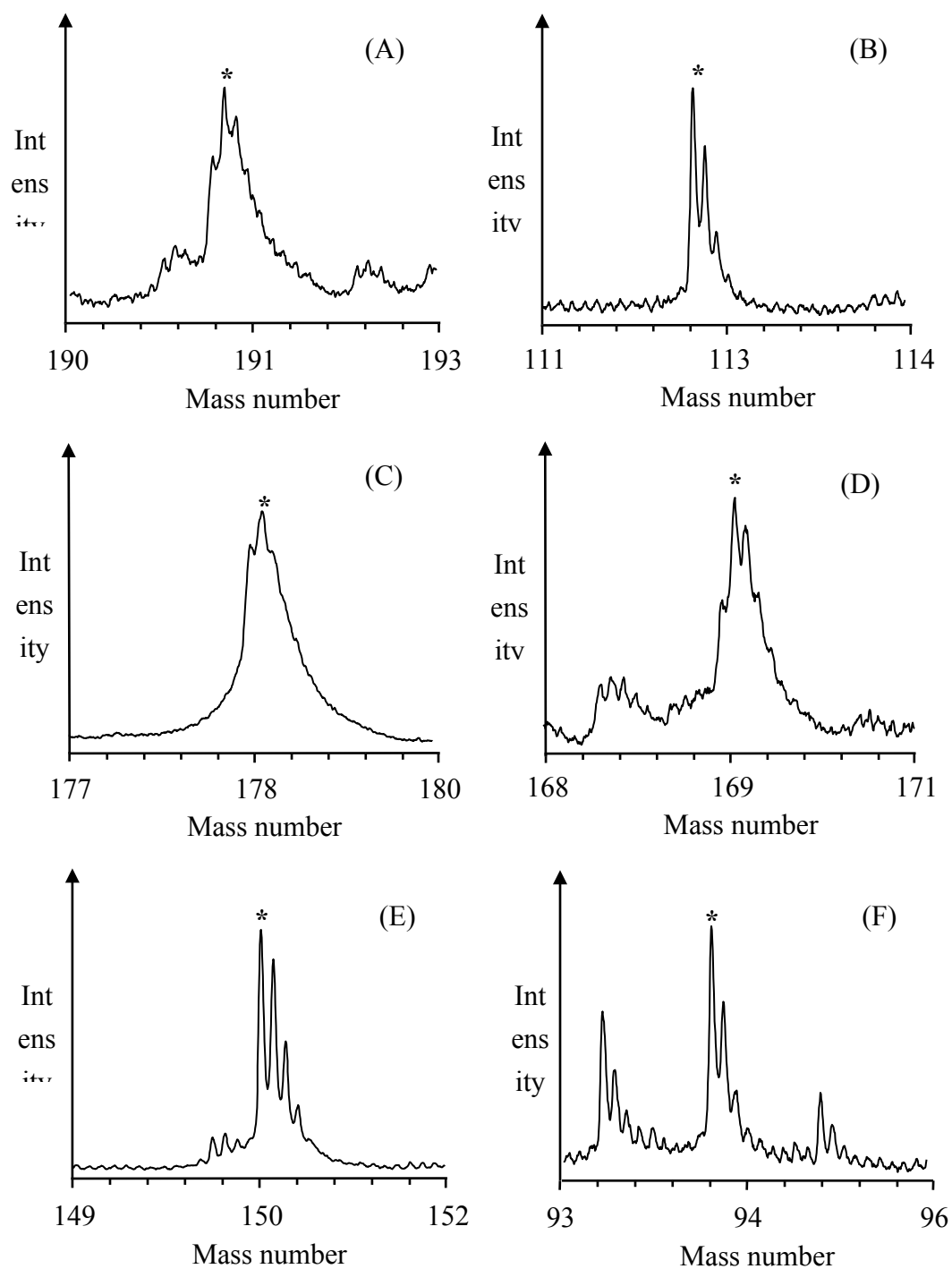


Fig. S2 MALDI TOF-mass spectra of trypsin-digested rat Mb fragments.

(A) Val17–Lys34 (molecular mass calcd 1913, found 1912.6), (B) Asn48–Lys56 (calcd 1124, found 1127.6), (C) Gly80–Lys96 (calcd 1788, found 1786.1), (D) Tyr 103–Lys116 (calcd 1695, found 1695.6), (E) Tyr 119–Lys133 (calcd 1505, found 1505.2), (F) Ala146–Gly153 (calcd 942, found 942.4).

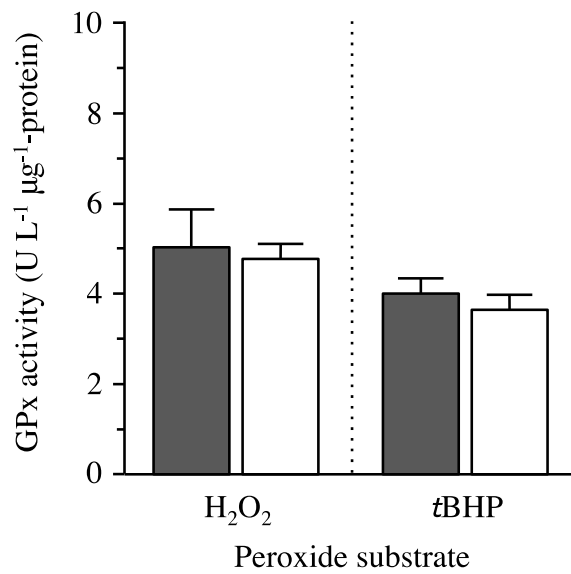


Fig. S3 Cellular GPx activity for hydrogen peroxide and *tert*-butyl hydroperoxide (*t*BHP) in the hepatic cell lysate. ■ non-administered (regular diet only), □ SA-administered. Selenious acid in saline was orally administered to 6-week old male mice at a dose of 1.5 μgSe kg⁻¹-body weight day⁻¹ for two weeks. Data express mean and SD (*n* = 5).

1		1 1
Gly Leu Ser Asp Gly Glu Trp Gln Leu Val		Leu Asn Val Trp Gly Lys Val Glu Ala Asp
21		31
Ile Pro Gly His Gly Gln Glu Val Leu Ile		Arg Leu Phe Lys Gly His Pro Glu Thr Leu
41		51
Glu Lys Phe Asp Lys Phe Lys His Leu Lys		Ser Glu Asp Glu Met Lys Ala Ser Glu Asp
61		71
Leu Lys Lys His Gly Ala Thr Val Leu Thr		Ala Leu Gly Gly Ile Leu Lys Lys Lys Gly
81		91
His His Glu Ala Glu Ile Lys Pro Leu Ala		Gln Ser His Ala Thr Lys His Lys Ile Pro
101		1 10 111
Val Lys Tyr Leu Glu Phe Ile Ser Glu Cys		Ile Ile Gln Val Leu Lys Lys Arg Tyr Ser
121		131
Gly Asp Phe Gly Ala Asp Ala Gln Gly Ala		Met Asn Lys Ala Leu Glu Leu Phe Arg Lys
141		151 153
Asp Met Ala Ser Asn Tyr Lys Glu Leu Gly		Phe Gln Gly

Fig. S4 Amino acid sequence of human myoglobin.