Supplementary Materials

Table S1: Phytochemical constituents of *P. fruticosa* leaves

Metabolites	Diethyl ether extract	Ethanol extract		Aqueous extract		Presence
		Non-hydrolysis	Hydro-lysis	Non-hydrolysis	Hydro-lysis	
Lipids	-	ND	ND	ND	ND	-
Carotenoids	-	ND	ND	ND	ND	-
Volatile oils	+	ND	ND	ND	ND	+
Free triterpenoids	+	ND	ND	ND	+	+
Triterpenoid hydrolysis	ND	ND	+	ND	+	+
Alkaloids	-	+	ND	+	ND	+
Coumarins	-	-	ND	-	ND	-
Anthraglycosides		ND	ND	-	ND	-
Flavonoids	-	+	+	+	+	+
Anthocyanosides	ND	+	ND	+	ND	+
Proanthocyanidins	ND	+	ND	+	ND	+
Tannins	ND	+	ND	+	ND	+
Saponins	ND	+	ND	+	ND	+
Organic acids	ND	+	ND	+	ND	+
Reducing agents	ND	+	ND	+	ND	+
Polyuronics	ND		ND	-	ND	-

(+): the presence; (−): the absence; ND: not determined

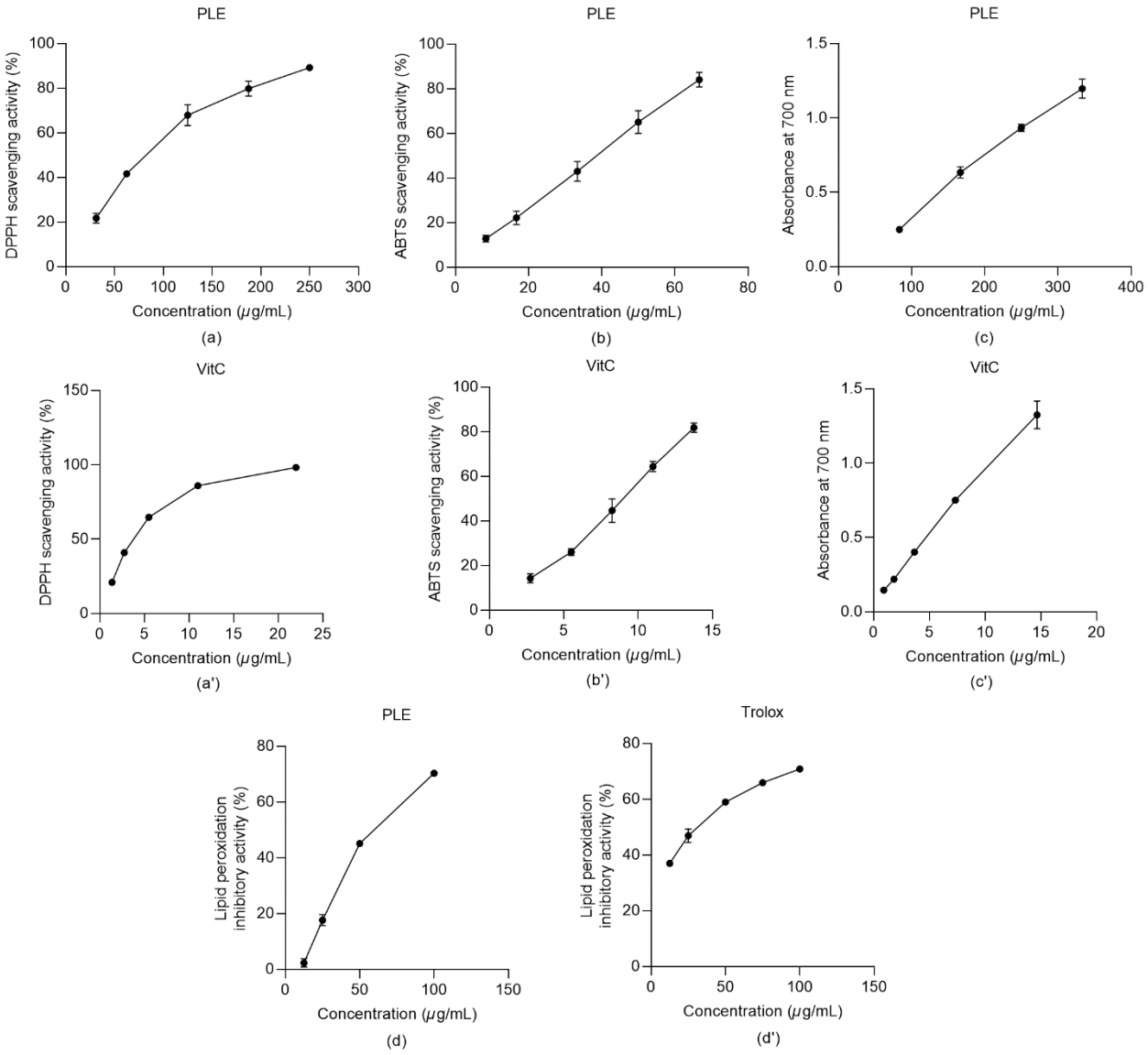

Figure S1: Antioxidant capacity of *P. fruticosa* leaf extract. (a, a') DPPH radical scavenging activity of PLE and vitamin C; (b, b') ABTS radical cation decolorization activity of PLE and vitamin C; (c, c') Reducing power activity of PLE and vitamin C; (d, d') Inhibition of lipid peroxidation of PLE and vitamin C; $n = 3$ and error bars represent the standard deviation of data.

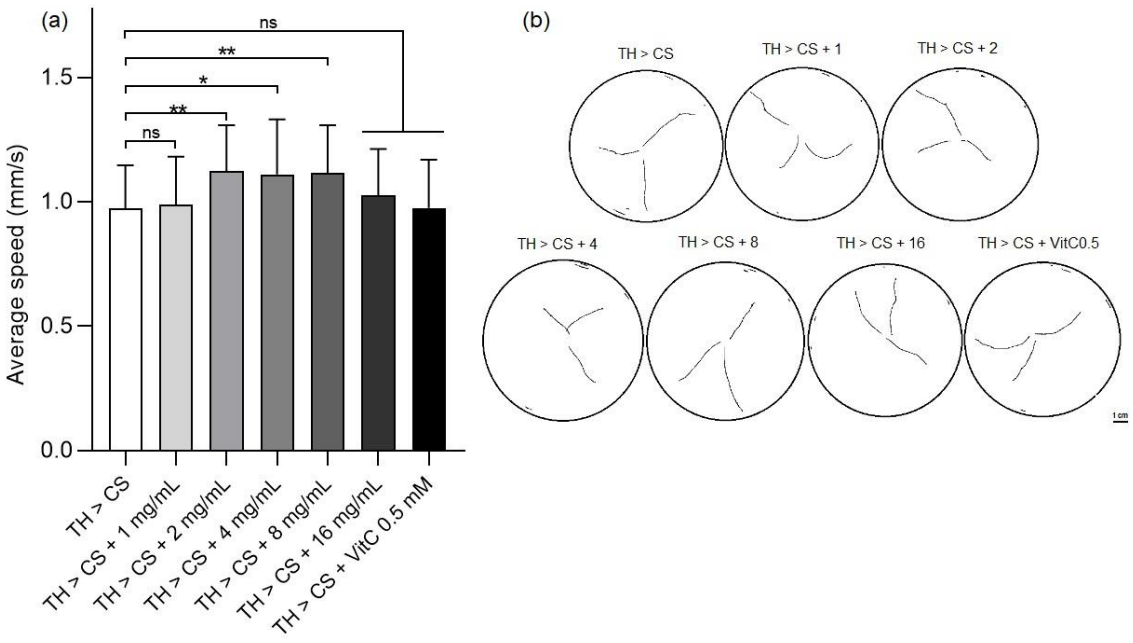

Figure S2: The effects of *P. fruticosa* leaf extract on the locomotive ability of control larvae. (a) Average crawling speeds of third-instar larvae. The control line TH-GAL4 (+; +; *TH-GAL4*/+). Error bars represent the standard deviation of data. VitC: 0.5 mM vitamin C. $n = 45$, one-way ANOVA: Tukey's test: $^{*}p < 0.05$, $^{**}p < 0.01$. (b) Images show the motion paths of control larvae (TH > CS), control larvae treated with PLE at different concentrations (TH > CS + 1-16) and 0.5 mM vitamin C (TH > CS + VitC0.5).

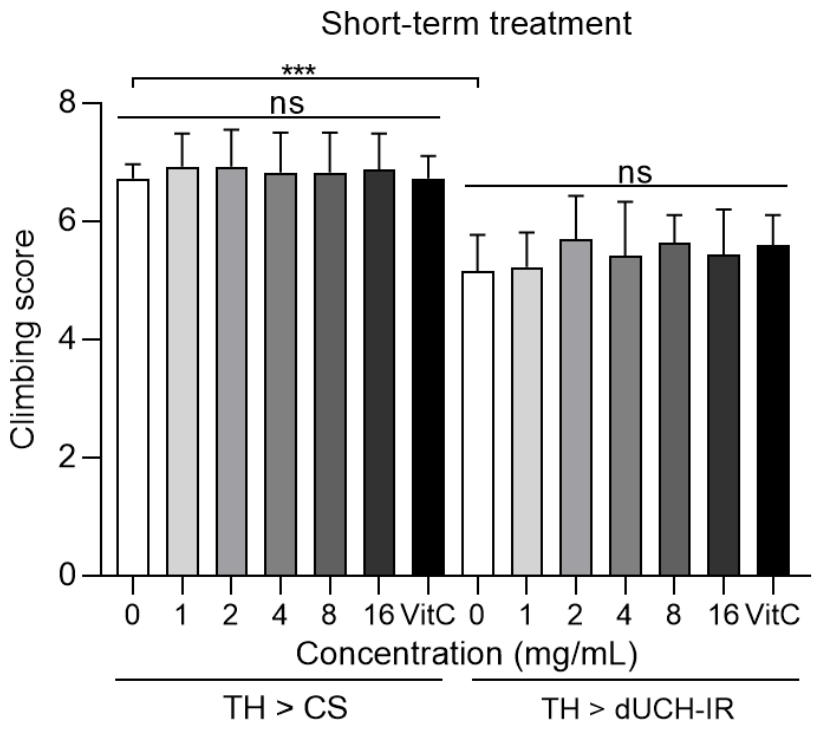

Figure S3: The effects of short-term treatment with *P. fruticosa* leaf extract on the climbing ability of 5-day-old adult flies. Short-term treatment: the treatment was carried out from the embryonic stage and interrupted after the third larval stage. Population size N = 10 and biological replication $n = 8$; Mann-Whitney test, ns: not significant, $^{ns}p > 0.05$, $^{***}p < 0.001$. The control line TH-GAL4 (+; +; *TH-GAL4*/+) and the dUCH-knockdown line TH > dUCH-IR (+; +; *TH-GAL4*/*UAS-dUCH-IR*). Error bars represent the standard deviation of data. VitC: 0.5 mM vitamin C.