Supplementary material

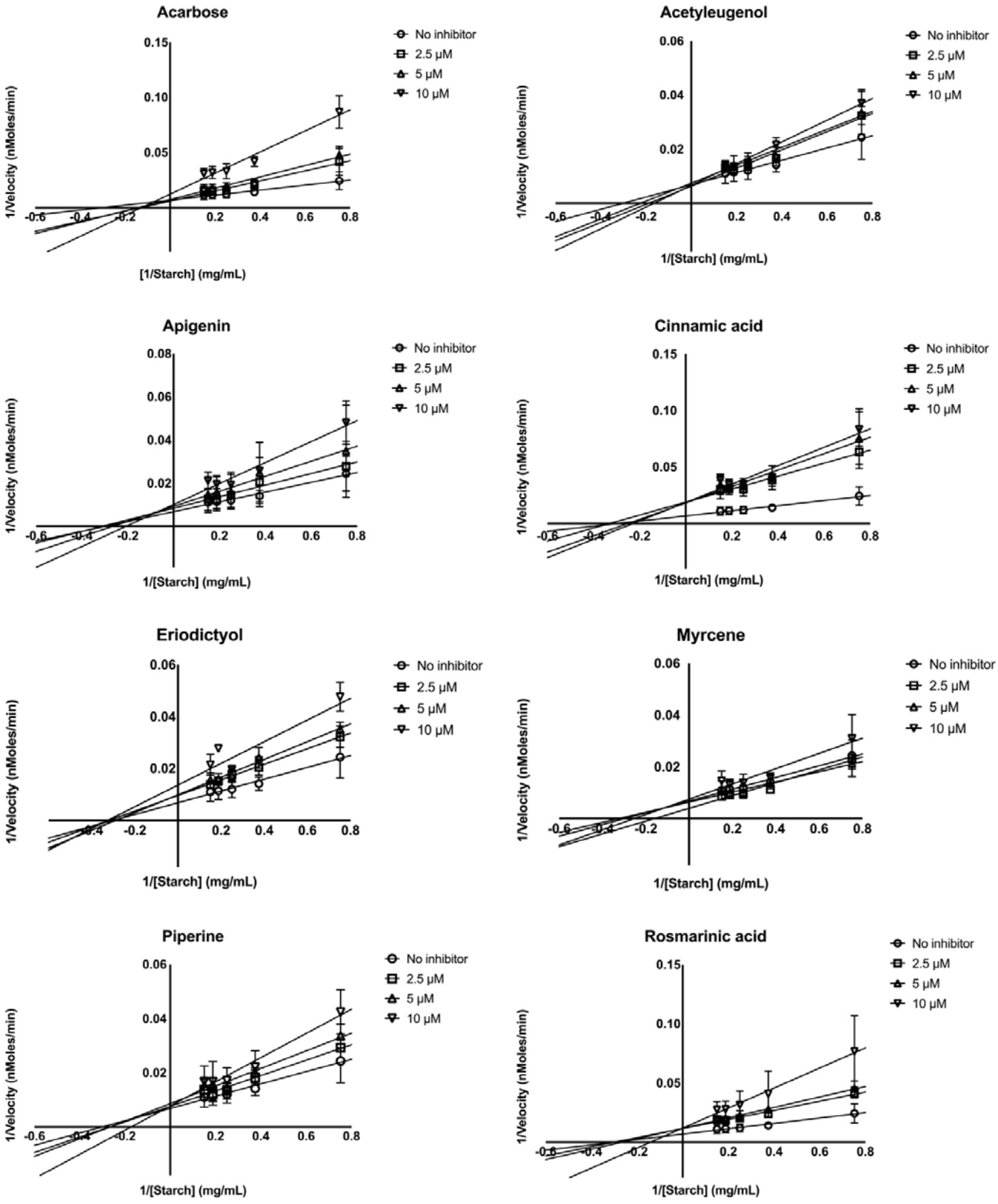

Figure S1. Lineweaver-Burk graphs of the inhibition of α-amylase by herbal compounds (n=3, SD error bars).

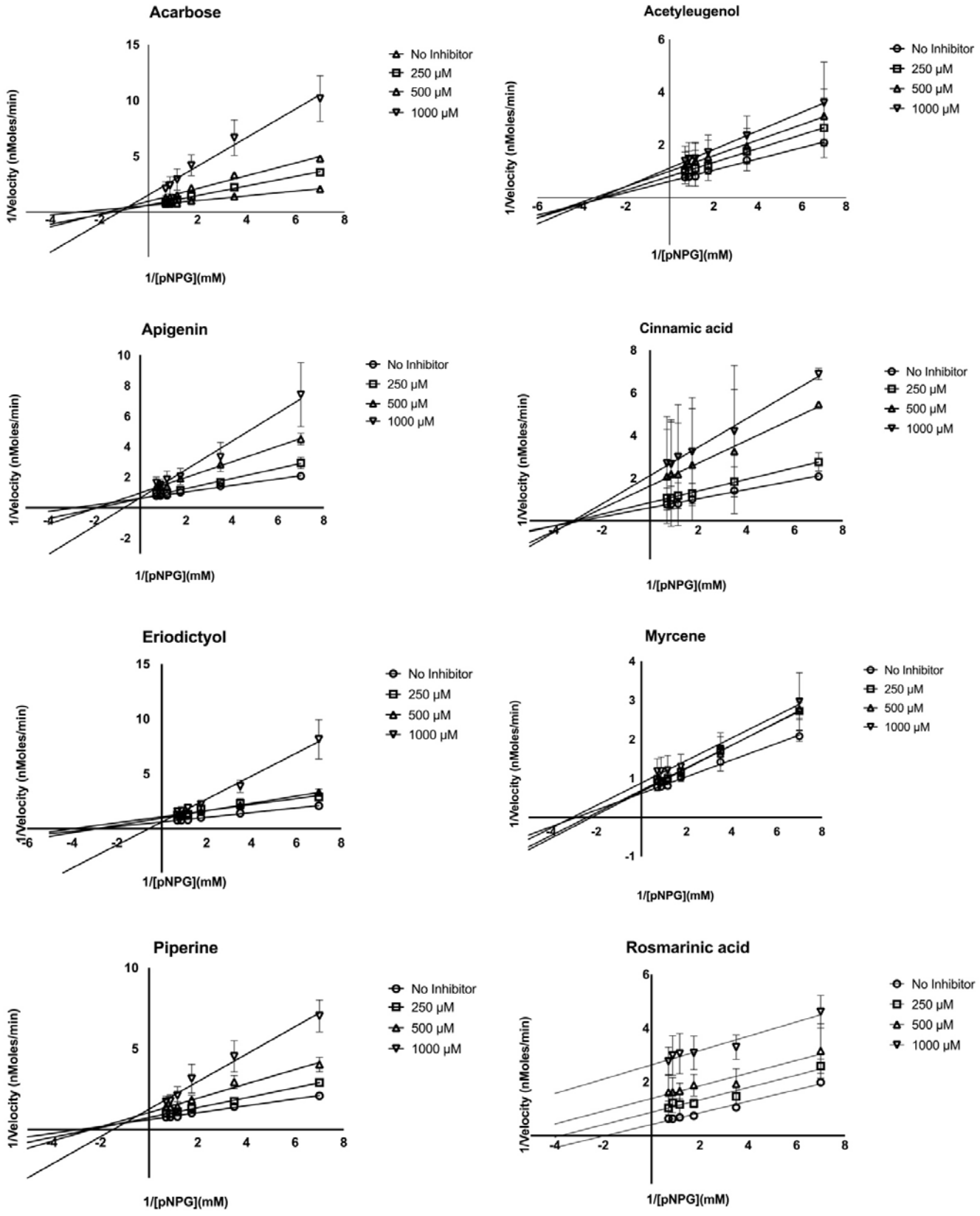

Figure S2. Lineweaver-Burk graphs of the inhibition of α-glucosidase by herbal compounds (n=3, SD error bars).

Table S1. Michaelis-Menten parameters for the inhibition of α-amylase by herbal compounds

Compound	Type of inhibition	K_m (mg/mL)	K_m app (mg/mL)			V_{max} (nMoles.min^{-1})	V_{max} app (nMoles.min^{-1})		
			2.5 µM	5 µM	10 µM		2.5 µM	5 µM	10 µM
Starch only (no inhibitor)	-	3.28 ± 0.4	-	-	-	152 ± 30	-	-	-
Acarbose (positive control)	Competitive		7.66 ± 1.7*	7.08 ± 0.7*	23.6 ± 3.2*		190 ± 21	143 ± 32	161 ± 10
Piperine	Competitive		4.98 ± 1.1*	5.82 ± 2.1*	7.08 ± 2.1*		159 ± 68	128 ± 43	163 ± 79
Cinnamic acid	Non-competitive		3.50 ± 1.9	4.72 ± 2.9	5.99 ± 4.3		59 ± 25*	62 ± 24*	71± 32*
Eriodictyol	Non-competitive		5.39 ± 0.9	3.56 ± 0.6	7.57 ± 4.2		98 ± 13*	104 ± 14*	100 ± 19*
Rosmarinic acid	Non-competitive		3.37 ± 0.4	4.11 ± 1.8	7.54 ± 4.2		88 ± 12*	89 ± 22*	67 ± 12*
Acetyleugenol	Mixed		5.44 ± 0.7*	5.34 ± 2.5*	6.36 ± 1.9*		100 ± 8*	110 ± 9*	115 ± 6*
Apigenin	Mixed		3.25 ± 0.2	3.53 ± 1.1	5.06 ± 1.1*		136 ± 52	118 ± 11*	108 ± 21*
Myrcene	None		14.0 ± 8.3	3.17 ± 0.9	3.98 ± 1.6		438 ± 90	161 ± 32	137 ± 8

Data are represented as mean ± SD (n = 3). The asterisks (*) denote values significantly different ($p < 0.05$) from no inhibition, determined with a two sided Student's t test.

Table S2. Michaelis-Menten parameters for the inhibition of α-glucosidase by herbal compounds

Compound	Type of inhibition	K_m (mM)	K_m app (mM)			V_{max} (nMoles.min^{-1})	V_{max} app (nMoles.min^{-1})		
			250 µM	500 µM	1000 µM		250 µM	500 µM	1000 µM
pNPG only (no inhibitor)	-	0.35 ± 0.07	-	-	-	1.52 ± 0.20	-	-	-
Acarbose (positive control)	Mixed		0.75 ± 0.28*	0.59 ± 0.01*	1.14 ± 0.18*		1.56 ± 0.33	0.94 ± 0.06*	0.76 ± 0.24*
Apigenin	Mixed		0.74 ± 0.42	0.55 ± 0.21	0.31 ± 0.04		2.04 ± 0.28*	0.97 ± 0.19*	0.93 ± 0.14*
Eriodictyol	Mixed		0.28 ± 0.01	0.34 ± 0.07	2.66 ± 2.08		0.91 ± 0.19*	0.95 ± 0.05*	1.18 ± 0.13*
Piperine	Mixed		0.39 ± 0.01	0.47 ± 0.20	1.24 ± 1.05		1.18 ± 0.01*	1.01 ± 0.08*	1.24 ± 0.21
Acetyleugenol	Non-competitive		0.36 ± 0.10	0.32 ± 0.09	0.31 ± 0.04		1.39 ± 0.63	1.08 ± 0.21*	0.93 ± 0.26*
Cinnamic acid	Non-competitive		0.37 ± 0.08	0.84 ± 0.51	1.02 ± 0.80		0.88 ± 0.09*	0.72 ± 0.21*	0.52 ± 0.14*
Rosmarinic acid	Uncompetitive		1.30 ± 0.35*	0.79 ± 0.09*	0.01 ± 0.01*		0.13 ± 0.01*	0.09 ± 0.01*	0.51 ± 0.03*
Myrcene	None		0.50 ± 0.01	0.46 ± 0.08	0.60 ± 0.51		1.47 ± 0.01	1.44 ± 0.32	1.26 ± 0.65

Data are represented as mean ± SD (n = 3). The asterisks (*) denote values significantly different ($p < 0.05$) from no inhibition, determined with a two sided Student's t test.

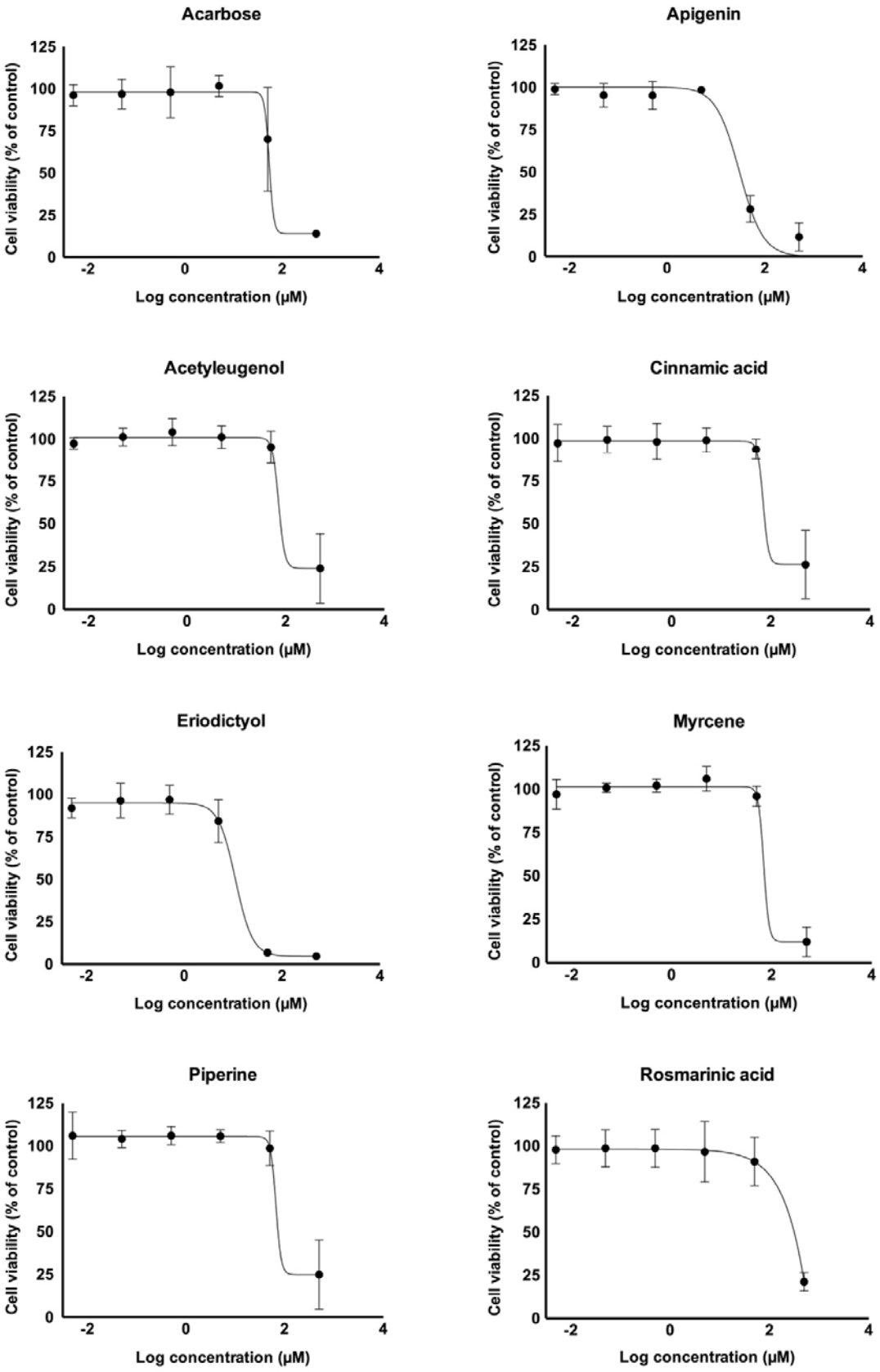

Figure S3. Viability of C2C12 cells after 72 h exposure to acarbose (control) and herbal compounds (n=3, SD error bars).

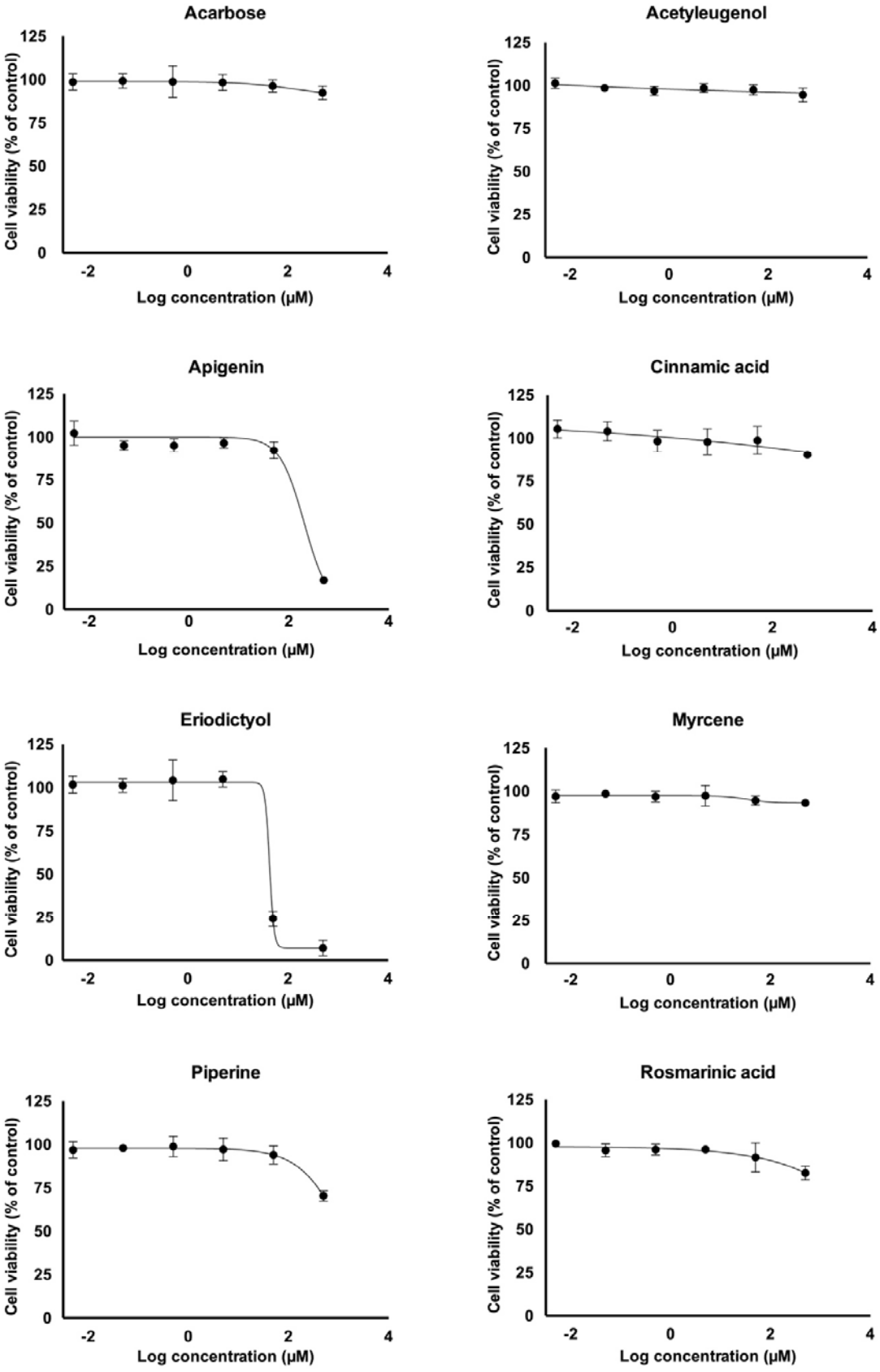

Figure S4. Viability of HepG2 cells after 72 h exposure to acarbose (control) and herbal compounds (n=3, SD error bars).