

Supplementary Materials: Quantitative Determination of Alkaloids in Lotus Flower (Flower Buds of *Nelumbo nucifera*) and Their Melanogenesis Inhibitory Activity

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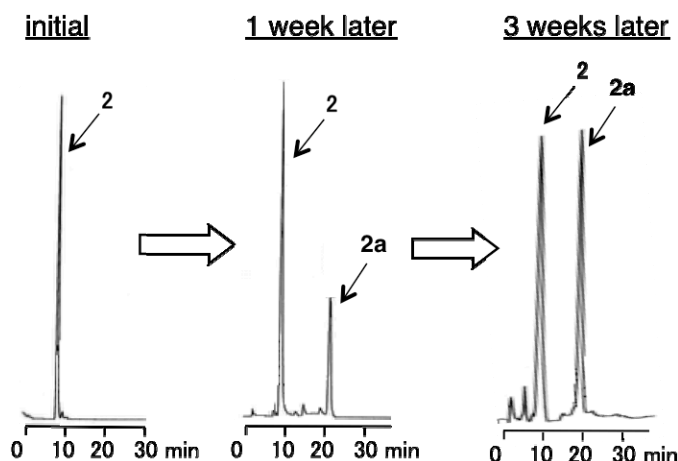


Figure S1. Monitoring for chemical transformation of 2 into its ammonium carbamate salt (2'') and to methyl carbamate (2a) by HPLC analysis.

Table S1. Contents of alkaloids (1–10) in the methanol extracts from the leaf, fruit, and embryo parts of *N. nucifera*.

Sample No.	Part	Loss of Drying ^a (%)	Extraction Yield ^b (%)	Contents (mg/g in Dry Material)					
				1	2	3	4	5	
NN-9	Leaf	9.8	19.0	0.24	0.05	0.38	0.14	n.d. ^c	
NN-10	Fruit	10.9	10.9	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	
NN-11	Fruit	9.3	10.0	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	
NN-12	Embryo	8.4	32.8	0.02	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	
				Contents (mg/g in dry material)					
				6	7	8	9	10	Total ^a
				0.16	0.25	0.16	n.d. ^c	0.07	1.20
				n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c
				n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c	n.d. ^c
				0.25	n.d. ^c	0.20	n.d. ^c	0.17	0.64

^a Each powdered sample was dried at 105°C for 8 h; ^b each powdered sample was extracted two times with methanol under reflux for 120 min and ^c less than the quantitation limit.

Table S2. Contents of alkaloids (1–10) in the methanol extracts from the leaf (NN-9), fruit (NN-10 and 11), and embryo (NN-12) of *N. nucifera*.

Sample No.	Inhibition (%)					IC ₅₀ (µg/mL)
	0 µg/mL	3 µg/mL	10 µg/mL	30 µg/mL	100 µg/mL	
NN-9	0.0 ± 4.9 (100.0 ± 3.4)	15.0 ± 5.7 (66.2 ± 2.6 #)	7.6 ± 6.3 (58.8 ± 1.9 #)	15.6 ± 8.0 (51.7 ± 3.1 #)	— (39.5 ± 1.7 #)	>100
NN-10	0.0 ± 3.6 (100.0 ± 4.9)	22.7 ± 9.2 (112.2 ± 3.2)	8.4 ± 4.8 (103.9 ± 4.9)	17.5 ± 5.6 (119.7 ± 3.8)	11.6 ± 1.5 (126.8 ± 4.9)	>100
NN-11	0.0 ± 7.6 (100.0 ± 2.1)	11.9 ± 6.8 (99.3 ± 2.8)	2.8 ± 4.1 (92.2 ± 5.9)	22.8 ± 4.9 (102.8 ± 2.2)	42.8 ± 4.8 ** (113.2 ± 6.9)	>100
NN-12	0.0 ± 10.9 (100.0 ± 5.9)	30.8 ± 15.4 (107.8 ± 5.0)	88.0 ± 5.0 ** (95.5 ± 5.8)	92.9 ± 2.8 ** (84.8 ± 4.5)	71.6 ± 1.9 ** (56.2 ± 2.7 #)	4.5

Each value represents the mean ± S.E.M. ($n = 4$); asterisks denote significant differences from the control group, ** $p < 0.01$.; #cytotoxic effects were observed, and values in parentheses indicate cell viability (%) in MTT assay.