

## Supplementary material

**Table S1.** Media used for callus induction of lotus from Haman region. All media were sterilized at 121°C, 15 min and pH was adjusted to 5.8.

	mg/L						
	M1	M2	M3	M5	M6	M7	M8
NH <sub>4</sub> NO <sub>3</sub>	-	1,650.0		825.0		1,650.0	
KNO <sub>3</sub>	2,500.0	1,900.0	2,500.0	950.0	2,500.0	1,900.0	2,830.0
MgSO <sub>4</sub> · 7H <sub>2</sub> O	400.0	370.0	250.0	185.0	250.0	370.0	184.85
(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>			134.0		134.0		462.49
MnSO <sub>4</sub> · H <sub>2</sub> O	10.0	22.3	10.0	11.2	10.0	22.3	2.98
ZnSO <sub>4</sub> · 7H <sub>2</sub> O	1.0	8.6	2.0	4.3	2.0	8.6	1.5
CuSO <sub>4</sub> · 5H <sub>2</sub> O	0.2	0.025	0.025	0.013	0.025	0.025	
KI	1.0	0.83	0.75	0.42	0.75	0.83	0.8
NaH <sub>2</sub> PO <sub>4</sub>			150.0		150.0		
KCl			300.0		300.0		
CoCl <sub>2</sub> · 6H <sub>2</sub> O	0.1	0.025	0.025	0.013	0.025	0.025	
NH <sub>2</sub> H <sub>2</sub> PO <sub>4</sub>	300.0		150.0		150.0		
CaCl <sub>2</sub> · 2H <sub>2</sub> O	200.0		150.0	220.0	150.0	440.0	125.42
KH <sub>2</sub> PO <sub>4</sub>				85.0		170.0	313.0
H <sub>3</sub> BO <sub>3</sub>	5.0	6.2	3.0	3.1	3.0	6.2	1.6
Na <sub>2</sub> MoO <sub>4</sub> · 2H <sub>2</sub> O	0.1	0.25	0.25	0.13	0.25	0.25	0.25
FeSO <sub>4</sub> · 7H <sub>2</sub> O	15.0	27.85	27.85	13.93	27.85	27.85	27.85
Na <sub>2</sub> -EDTA	20.0	37.25	37.25	18.63	28.0	37.25	37.25
Myo-inositol	1,000.0	100.0	100.0	6,000.0	100.0	100.0	100.0
Thiamine HCl	5.0	0.4	10.0	0.4	10.0	0.4	1.1
Nicotinic acid	5.0		1.0		1.0		0.5
Pyridoxine HCl	0.5		1.0		1.0		0.5
Sucrose	30,000.0	30,000.0	20,000.0	30,000.0	20,000.0	30,000.0	30,000.0
Phytigel	4,000.0	4,000.0	4,000.0	4,000.0	4,000.0	4,000.0	4,000.0
Proline							700.0
Glycine							2.0
Casain hydrolysate							100.0
2,4-Dichlorophenoxyacetic acid	0.5				1.5	1.0	
p-chlorophenoxyacetic acid	2.0						
Kinetin	0.1		0.1		0.1		
6-benzyladenin		1.0		1.0			
α-naphthaleneacetic acid		2.0	1.0		1.0		
Indole-3-acetic acid					0.1		

**Table S2.** Process and raw material list for cream manufacturing.

Phase	Component	Content (%)
Aqueous phase	Purified water	Up to 100
	Glycerin	10-25
	Betaine	-
	Sodium hyaluronate	-
	Thickener	q.s
	Chelating agent	q.s
Oil phase	PEG-100 stearate	0.1-2
	Glyceryl stearate	0.1-2
	Polysorbate 60	0.1-2
	Stearic acid	0.1-2
	Cetearyl alcohol	0.1-2
	Capric/caprylic triglyceride	10-30
	Tocopheryl acetate	0.1-0.5
Addition I	Fragrance	q.s
	Preservative	q.s
	Other additives	q.s

q.s: Quantum satis