

## Supplementary Material: Vine Cane Compounds to Prevent Skin Cells Aging through Solid Lipid Nanoparticles

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**Table S1. Solid Lipid Screening**

Solid li- pid	EGCG					Resveratrol					Myricetin				
	Ratio (w/w)	Time (min)				Ratio (w/w)	Time (min)				Ratio (w/w)	Time (min)			
		15	30	45	60		15	30	45	60		15	30	45	60
Gelucire® 50/13	1:100	-	-	-	-	1:100	-	-	-	-	1:100	-	-	-	-
Com- pritol® H105 ATO	1:100	-	-	-	-	1:200	+	+	+	-	1:100	-	-	-	-
Softisan® 100	1:100	-	-	-	-	1:200	+	+	+	+					
Apifil®	1:100	+	+	+	+										
Precirol® 5 ATO	1:100	+	+	+	+										
Witepsol® E76	1:100	+	+	+	+										

<b>Suppocire DM Pel-lets</b>	1:100	+	+	+	+		
<b>Suppocire NA15 pel-lets</b>	1:100	+	+	+	+		
<b>Gelucire 39/01</b>	1:100	+	+	+	+		
<b>Gelucire® 43/01</b>	1:100	+	+	+	+		
<b>Cetyl palmitate</b>	1:100	+	+	+	+		
<b>Stearic acid</b>	1:100	+	+	+	+		
<b>Dynasan® 118</b>	1:100	+	+	+	+		
<b>Glyceryl monos-tearate</b>	1:100	+	+	+	+		
<b>Softisan® 154</b>	1:100	+	+	+	+		

**Table S2.** Ultra-Turrax and ultrasonication times tested for Gelucire® 50/13 and Pluronic F-127, and the formulation characteristics (size, zeta potential (ZP) and PdI).

SLN: Gelucire® 50/13 + pluronic-F127			
S (min)	UT(min)	0,5	2
5	Consistency and colour not acceptable	-	
15	Consistency and colour not acceptable	-	
30	Consistency and colour not acceptable	-	

**Table S3.** Ultra-Turrax and ultrasonication times tested for Gelucire® 50/13 and Tween 80, and the formulation characteristics (size, zeta potential (ZP) and PdI).

SLN: Gelucire® 50/13 + Tween 80			
S (min)	UT(min)	0,5	2
5		Consistency and colour not acceptable	-
15		-	-
30		Consistency and colour not acceptable	Consistency and colour not acceptable

**Table S4.** Ultra-Turrax and ultrasonication times tested for Compritol® HD5 ATO and Pluronic F-127, and the formulation characteristics (size, zeta potential (ZP) and PdI).

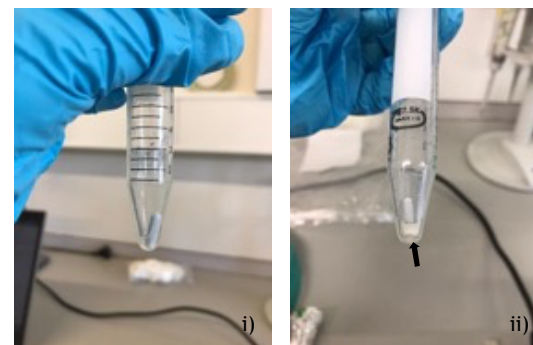
SLN: Compritol® HD5 ATO + pluronic-F127			
S (min)	UT(min)	0,5	2
5		<b>Size:</b> 83%- 716 nm and 16%- 138 nm <b>PdI:</b> 0,409 <b>ZP:</b> -0,6 mV	<b>Size:</b> 350 ± 17 nm <b>PdI:</b> 0,353 ± 0,007 <b>ZP:</b> -0,4 ± 0,3 mV
15		-	<b>Size:</b> 206 ± 5 nm <b>PdI:</b> 0,21 ± 0,01 <b>ZP:</b> -1,9 ± 0,4 mV
30		<b>Size:</b> 315 ± 10 nm <b>PdI:</b> 0,434 ± 0,003 <b>ZP:</b> -0,5 ± 0,1 mV	<b>Size:</b> 96 ± 33 nm <b>PdI:</b> 0,307 ± 0,004 <b>ZP:</b> -1,7 ± 0,7 mV

**Table S5.** Ultra-Turrax and ultrasonication times tested for Compritol® HD5 ATO and Tween 80, and the formulation characteristics (size, zeta potential (ZP) and PdI).

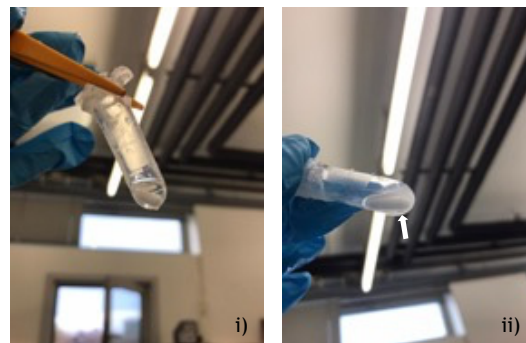
SLN: Compritol® HD5 ATO + tween 80			
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S (min)	UT(min)	0,5	2
		<b>Size:</b> 81,5%- 1844 nm and 18,5%- 90 nm <b>PdI:</b> 0,631 <b>ZP:</b> 37,1%-(-13,1) mV and 62,9%-14,8 mV	-
5			-
15		-	Solidified
30		<b>Size:</b> 92,2%- 2025 nm and 7,8%- 63 nm <b>PdI:</b> 0,560 <b>ZP:</b> -6,39 mV	Solidified

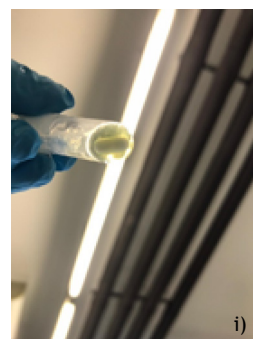
Solid lipid screening for EGCG in a 1:100 ratio: i) compritol HD5 ATO and  
ii) Glyceryl monostearate



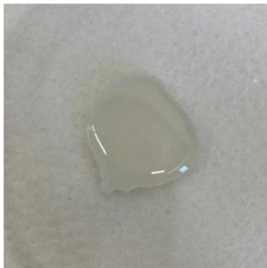

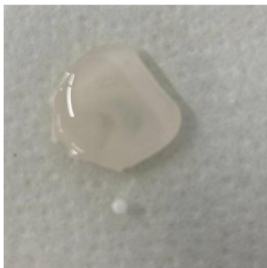



Solid lipid screening for Resveratrol in a 1:200 ratio: i) compritol HD5 ATO and ii) softisan 100


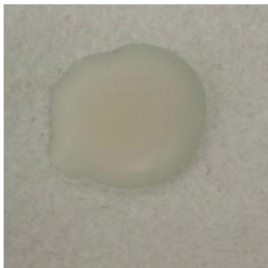




Solid lipid screening for myricetin in a 1:100 ratio: i) compritol HD5 ATO. All the tested solid lipids were compatible with this natural compound



**Figure S1.** Examples of lipids that were able to solubilize the NC (i), while the (ii) figures are representatives of the ones that could not solubilize the NC, since compound crystals can be visualized.

Lipids / Conditions	NC	Melted	After cooling down
Gelucire 50/13; 15 min; ratio 1:100	EGCG		
Compritol HD5 ATO; 15 min; ratio 1:100			
Softisan 100; 15 min; ratio 1:100			

Gelucire 50/13; 15 min; ratio 1:100	Resveratrol		
Compritol HD5 ATO; 60 min; ratio 1:200			
Gelucire 50/13; 15 min; ratio 1:100	Myricetin		
Compritol HD5 ATO; 15 min; ratio 1:100			

**Figure S2.** Images of the lipids that solubilized the NC, after melting and after cooling down.



**Figure S3.** Images of the samples before and after the first and second centrifugation included in the accelerated stability study assays before centrifugation (i); after the first centrifugation (30 minutes) (ii); and after the second centrifugation (30 minutes + 30 minutes) (iii).