

Supporting Information (SI)

Engineering Phytosterol-based Oleogels for Potential Application as Sustainable Petrolatum Replacement

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Running title: Engineering Phytosterol-based Oleogels in Edible Oils

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Table S. fatty acid combination of the edible oils (sunflower oil, olive oil, algae oil, corn oil, soybean oil) used in the work.

Fatty acids	Olive oil	Algae oil	Soybean oil	Corn oil	Sunflower oil
Myristic C _{14:0}	0.01±0.01	2.63±0.11	— <i>n.d.</i>	0.04±0.01	—
Palmitic C _{16:0}	13.45±0.34	37.13±0.52	10.5±0.1	13.28±0.82	6.17±0.00
Stearic C _{18:0}	2.23±0.22	1.29±0.03	4.5±0.1	1.75±0.33	3.51±0.01
Oleic C _{18:1}	73±1	0.59±0.01	56.47±0.81	31.21±0.032	27.53±0.35
Linoleic C _{18:2}	10.88±0.09	0.62±0.02	20.00±0.24	52.08±0.91	61.47±0.18
Linolenic C _{18:3}	0.89±0.04	0.31±0.02	7.7±0.1	1.2±0.1	—
Arachidic C _{20:0}	0.33±0.03	—	0.35±0.05	0.35±0.06	0.25±0.00
Eicosenoic C _{20:1}	0.28±0.01	—	0.24±0.03	—	0.19±0.00
Arachidonic C _{20:4}	—	0.09±0.01	—	—	—
Behenic C _{22:0}	0.08±0.01	—	0.34±0.00	—	0.49±0.37
DPA C _{22:5}	—	9.53±0.51	—	—	—
DHAC _{22:6}	—	41.27±1.23	—	—	—

Values are mean ± standard deviation. *n.d.* not detected (< LOD).

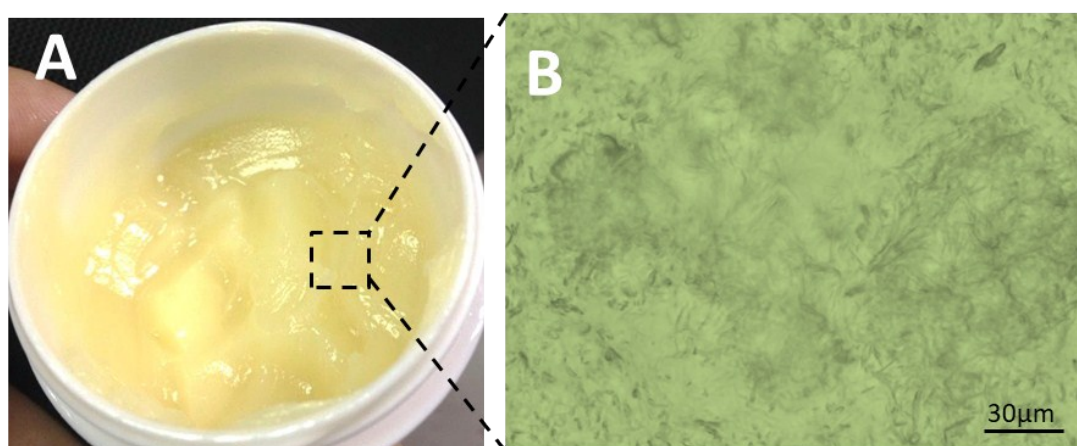


Fig. S1 Appearance (A) and optical microscopy (B) of a commercial petrolatum product.

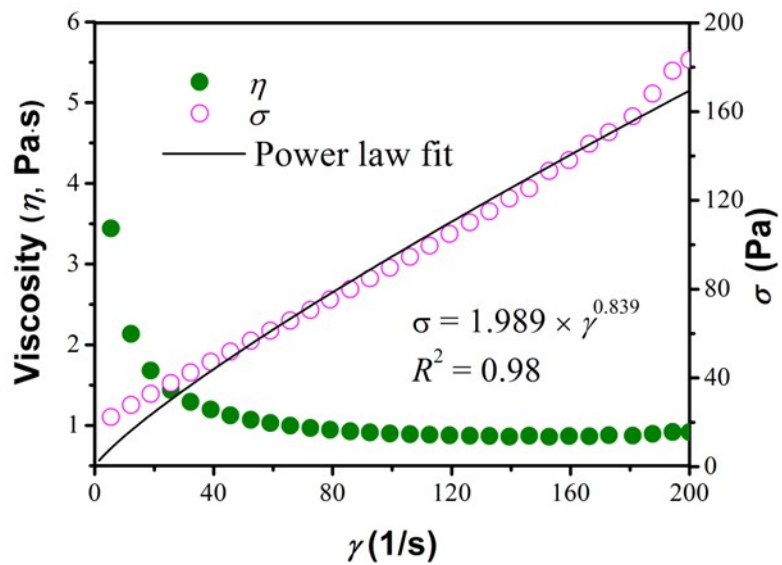


Fig. S2. Viscosity and shear stress with power law fit of a commercial petrolatum product.