Supplementary data

Canola protein thermal denaturation improved emulsion-templated oleogelation and its cake-baking application

Tang and Ghosh, 2021

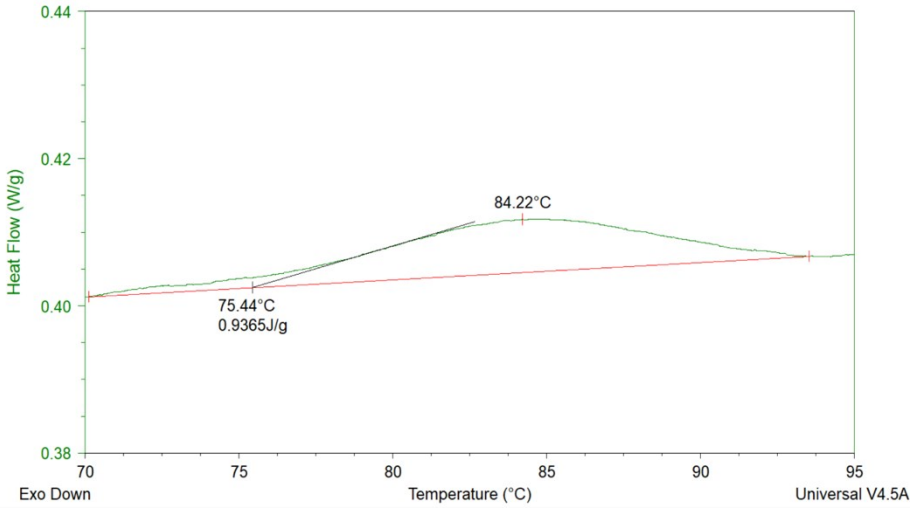

Figure S1: DSC thermogram of 7 wt% canola protein isolate solution at pH 7. The thermal cycle was run from 20 ºC to 100 ºC at a heating rate of 5 ºC/min.

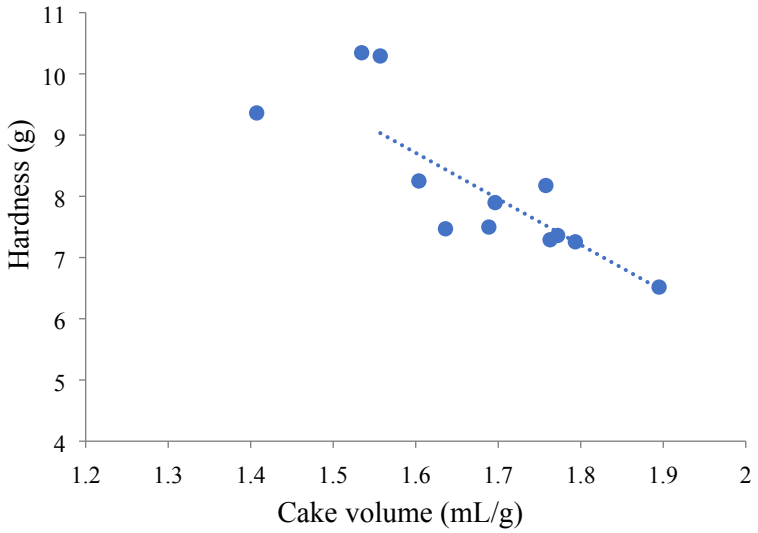

Figure S2: Cake hardness plotted against cake volume. Hardness (g) = -7.52 × cake volume (mL/g) + 20.73, $R^2 = 0.67$.

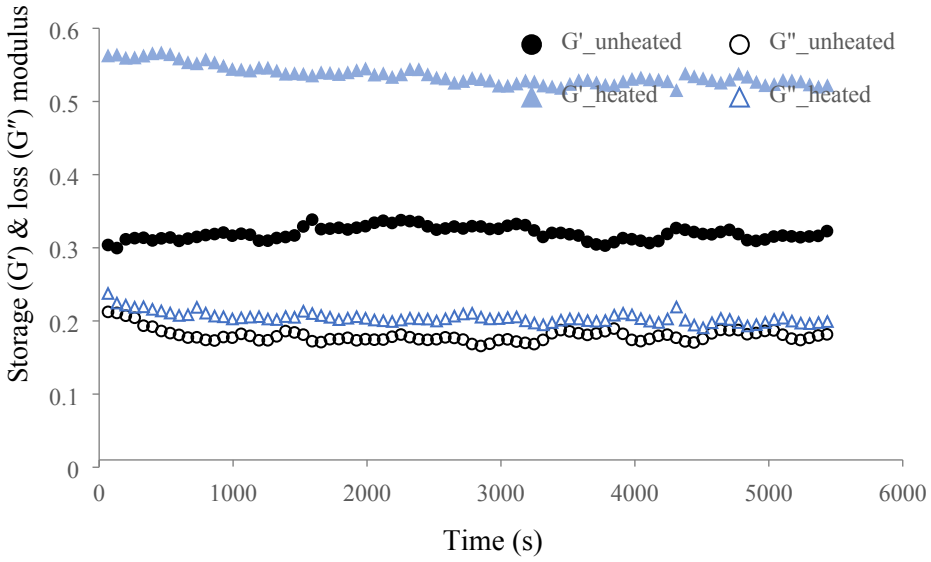

Figure S3: Interfacial rheology of unheated (circle symbols) and heated (triangle symbols) 0.25 wt% CPI solution at pH 7. The development of storage modulus (G′, closed symbols) and loss modulus (G″, open symbols) was recorded as a function of time at a constant strain (0.1%) and angular frequency (0.1 rad/s) for 1.5 hrs. The heat treated CPI solution (90 ºC, min) was cooled to room temperature, before performing the experiment. Interfacial rheology was determined in a rheometer (AR G2, TA Instruments, Montreal, QC, Canada) by using a Du Noüy ring geometry (10 mm diameter) placed at the canola oil-protein solution interface. At first, the ring (attached to the rheometer rotor) geometry was placed at the surface of the CPI solution in a glass wide mouth beaker (inner diameter 80 mm and depth 45 mm), followed by the gentle addition of an equal amount of canola oil on top of the aqueous phase to create the oil-water interface. The interface was equilibrated for 1.5 hrs while the interfacial moduli were recorded at a constant strain (0.1%) and angular frequency (0.1 rad/s).

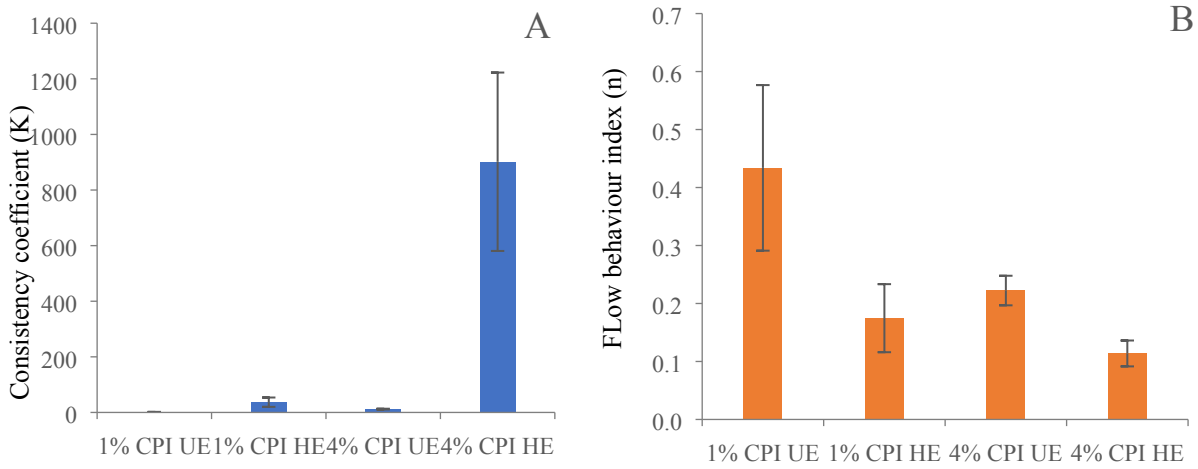

Figure S4. Application of Power law model to the viscosity data of the oleogels. (A) Consistency coefficient and (B) flow behaviour index. Values for 1 and 4 wt% CPI oleogels developed from unheated (UE) and heated (HE) emulsions.