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Supplementary Material

2 **Mechanical cell disruption of mustard bran suspensions for improved dispersion**

3 **properties and protein release**

4 **Food & Function**

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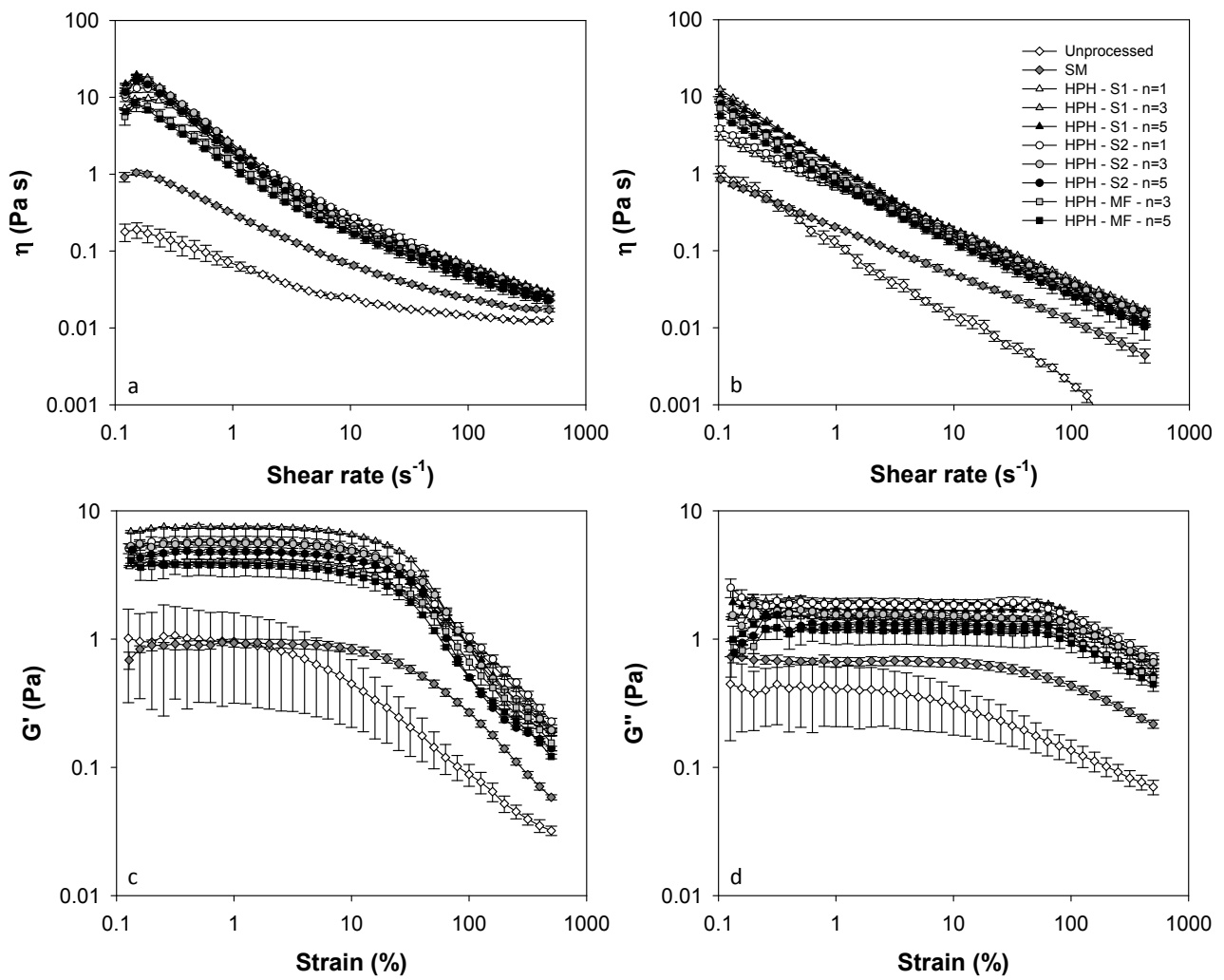
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22 **Rheological properties**

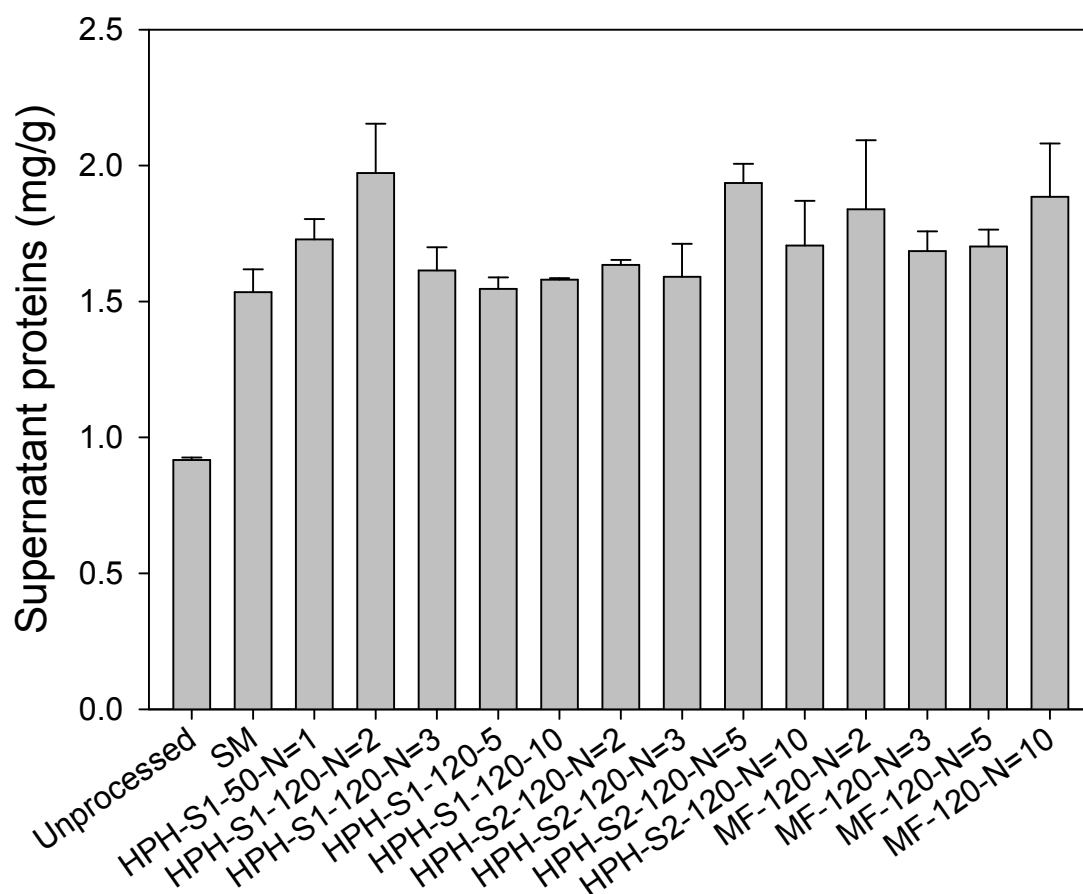
23 Figure S1 shows the effect of mechanical cell disruption (MCD) processing on the mustard bran
24 suspension, in terms of effect on viscosity η , which significantly increases both in the experiments of
25 ramping up the shear rate than of ramping down, as well as in the values of storage and loss moduli
26 G' and G'' in comparison to unprocessed and shear mixing- (SM) treated samples, which can be
27 observed in the entire range of shear stress and strain swept, respectively.

28 It must be pointed out that the unusual behavior exhibited by the viscosity curve at low shear rates
29 (close to 0.1 s^{-1}), with a decrease in viscosity when decreasing the shear rate, is most probably related
30 to unsteady state measuring conditions instead of sample properties. It is likely that, given the
31 relatively short ramping time (2 min), which might have resulted in insufficient time to reach steady
32 state at low shear rate values.



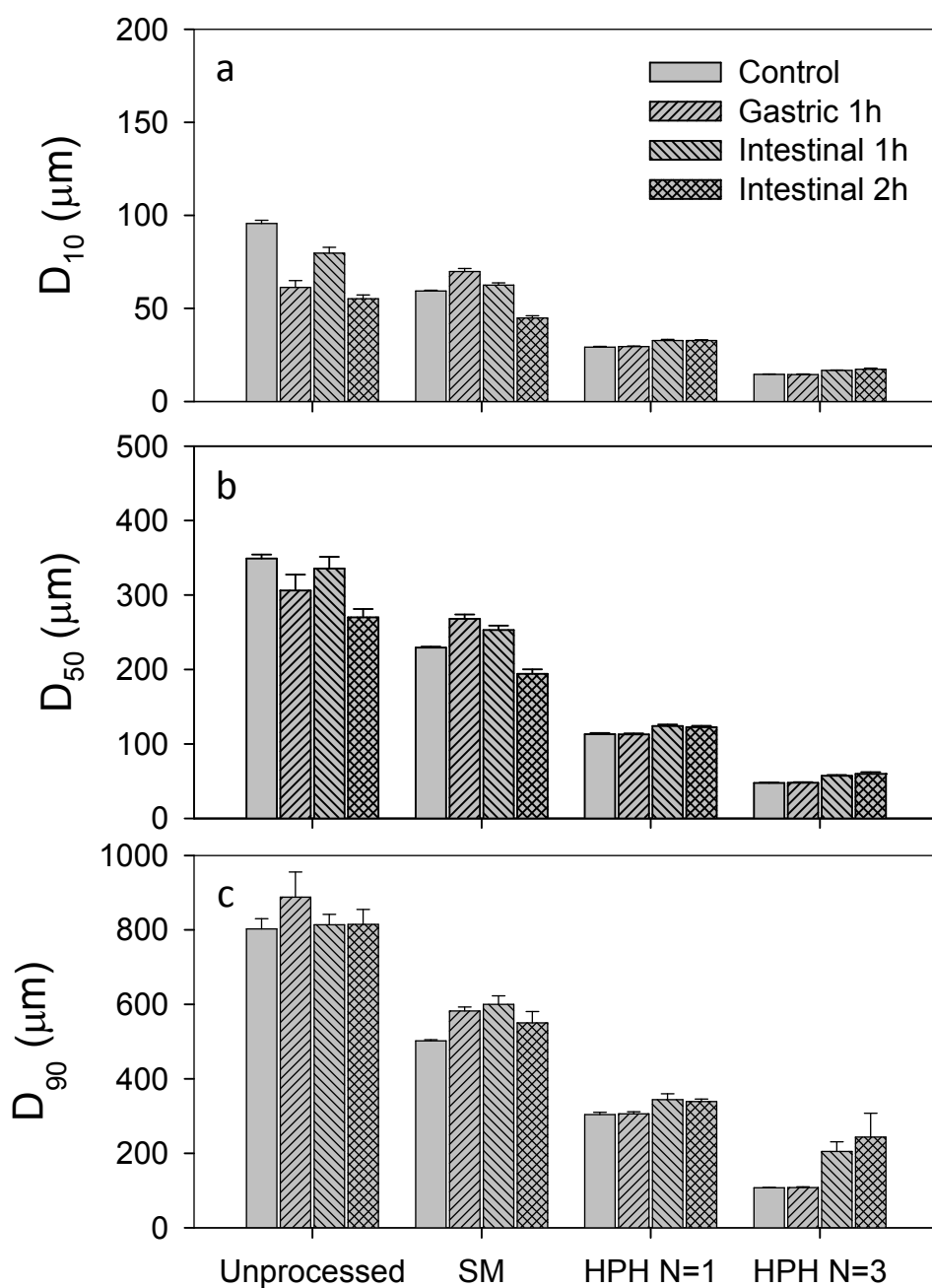
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34 *Figure S1. Rheological behavior of the mustard bran suspensions (2% wt) for different treatment*
 35 *conditions in terms of viscosity as a function of shear rate (a, ramp up, and b, ramp down), of G'*
 36 *and G'' for strain sweep (c, d, respectively).*



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 39 *Figure S2. Total proteins released in the supernatant recovered from mustard bran suspensions*
 40 *(2% wt) unprocessed, treated by SM and after processing by different HPH and MF passes and*
 41 *pressures (indicated on the x-axis legend before the number of passes N).*

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44 *Figure S3. Characteristic diameters D_{10} (a), D_{50} (b), and D_{90} (c) of the mustard bran suspensions*
 45 *(2% wt) unprocessed, treated by SM, and after processing by HPH for 1 or 3 passes (conditions of*
 46 *50/100 MPa - S2 in Figure 5), before and after simulated digestion.*

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