

The effect of transglutaminase and ultrasound pre-treatment on the gelling properties of pea protein

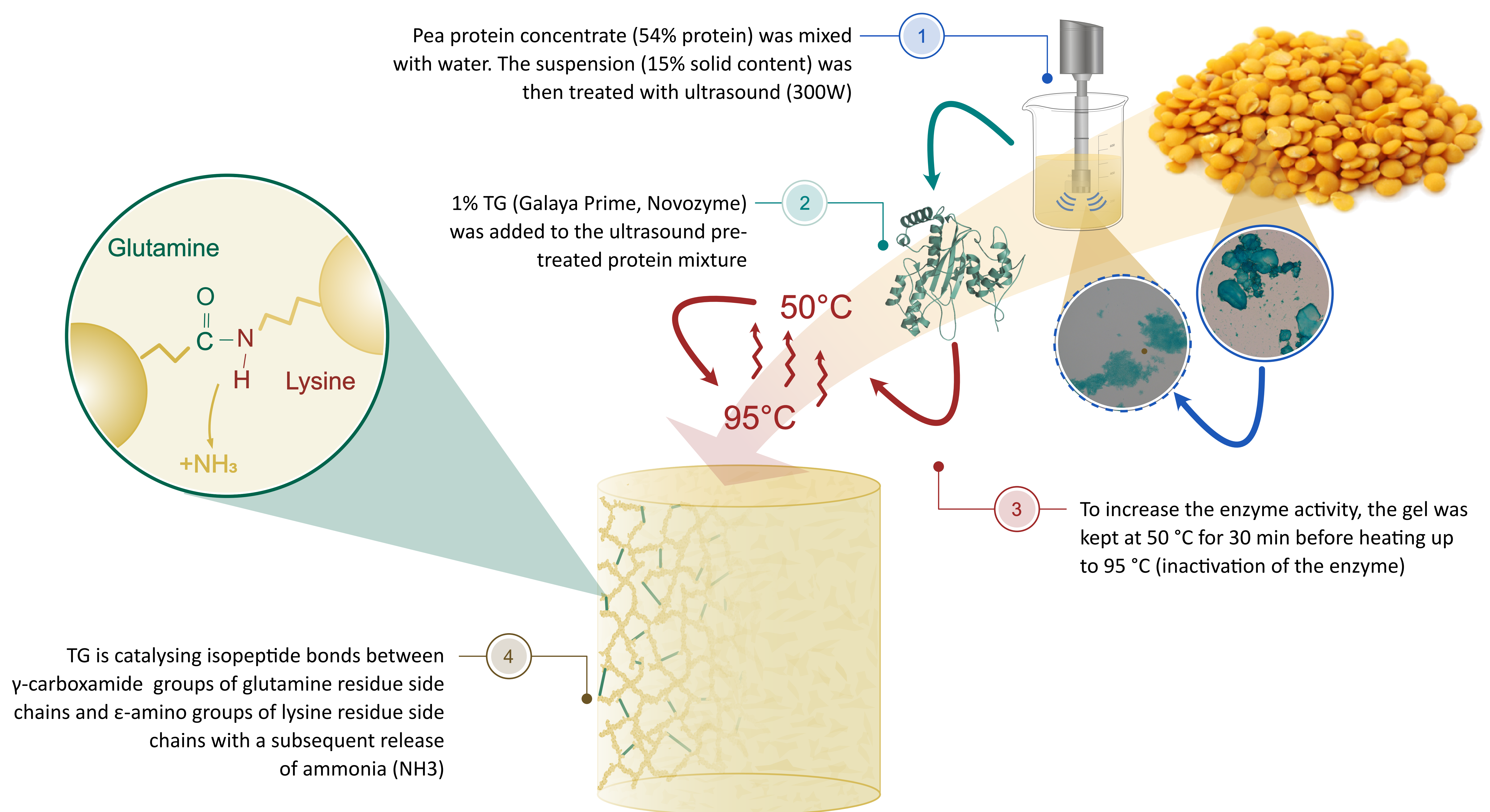
Aim

Plant globulins show a limited solubility and a tendency to aggregate during extraction. This, together with other factors negatively influences the gelation properties of plant-based proteins. The ability to form a stable network is essential for many different food applications. By using transglutaminase (TG) together with ultrasound pre-treatment the effect on the gelation properties of pea protein will be investigated.

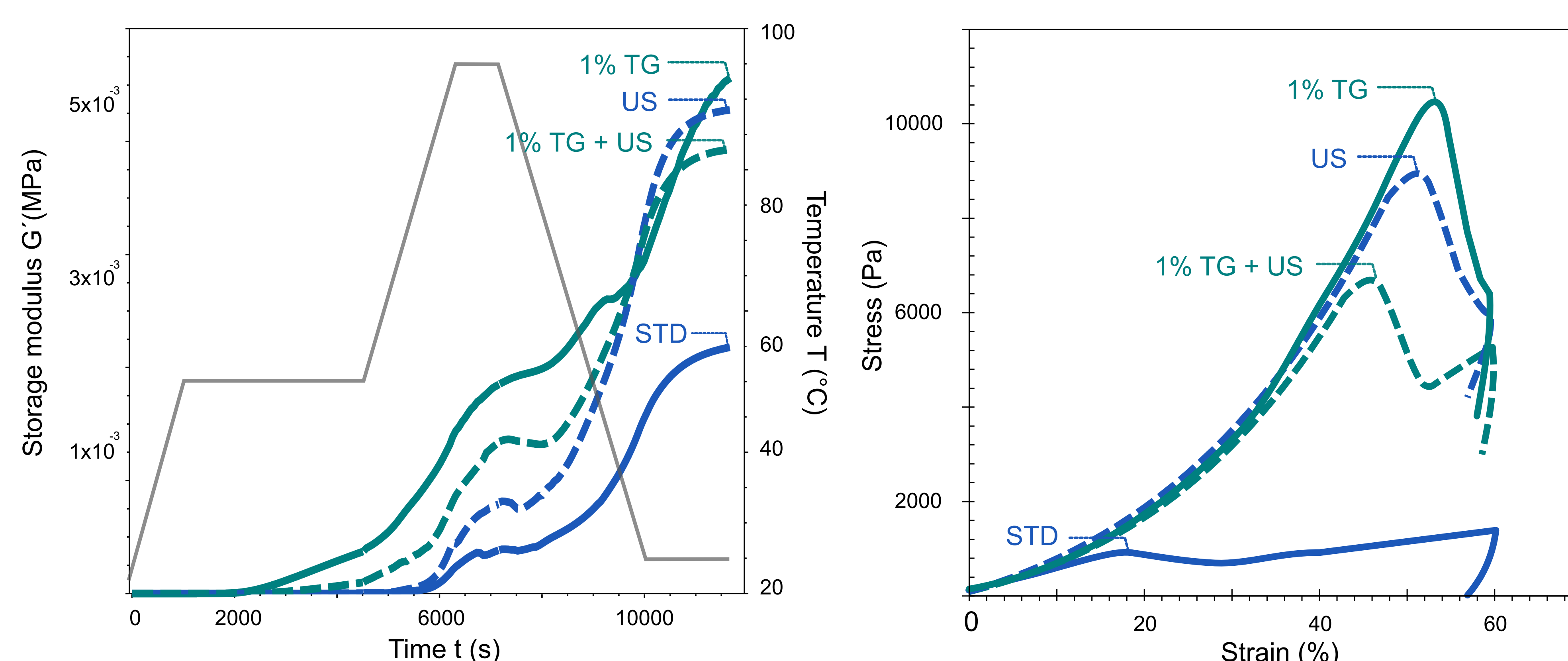
Conclusion

- The use of ultrasound and/or TG improves the gel strength and storage modulus
- Using 1% TG or ultrasound improves the gel strength and elasticity more than combining both methods

Material and Methods



Results



All pre-treatments result in gels with increased storage modulus G' . Protein gels with 1% TG show a higher strength than gels without additional pre-treatment. Ultrasound pre-treatment improves the strength significantly and results in gels with higher fracture stress. However, combining different treatments does not improve the gel strength more than using one method individually.