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## Effects of pectin/inulin on the rheological properties of whey protein

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Whey protein (WP) has been widely used in food industry due to its high nutritional value and good gelation property. Presence of polysaccharide may affect its gelation property including rheological properties. This study aims to investigate the effects of pectin and inulin, which are anionic and neutral polysaccharide, respectively, on the rheological properties of whey protein. Polymerized whey protein (PWP) was prepared by heating whey protein at 85oC for 30 min. WP/PWP (8%, w/v) suspensions added with pectin exhibited shear-thinning type and fitted with Sisko equation (R2>0.99), depending on pectin level (0.1-0.5%, m/v), DE value (22-58) and pH (7-9). As temperature increased from 30-90°C, shear viscosity of the WP/PWP and pectin mixtures decreased and fitted with Arrhenius equation. Gelation time of whey protein (10%, w/v) decreased from 1592.8 to 1155.3 s as pectin level increased from 0.5-1.5% (m/v). WP/PWP incorporated with inulin (1-5%, m/v) showed similar flow curves with those of WP/PWP and pectin mixtures as functions of shear rate and temperature. Inulin addition increased onset points from 77.3-84.5°C and decreased the storage and loss modulis of whey protein (15%, w/v). All results indicated that both anionic and neutral polysaccharides may alter the rheological properties of whey protein.

## **Biography**

Cuina Wang has completed her PhD from Jilin University in 2015. She is a Lecturer at the College of Food Science and Engineering, Jilin University. She has published 8 papers in reputed journals.

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