**The synergistic gelation of *Dendrobium officinale* polysaccharide (Dendronans) with xanthan gum and its rheological and texture properties**

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Abstract: Novel naturally sourced polysaccharides have attracted increasing attention in food areas, particularly in the preparation of food gels for people with dysphagia. To develop dysphagia food, understanding the properties of these food gels is of crucial importance. Herein, rheological properties, FTIR, XRD and thermal stabilities of Dendrobium officinale polysaccharide (DOP) mixed with xanthan gum (XG) in different ratios (from 9:1 to 5:5) were investigated. The results of rheology and FTIR showed that the DOP and XG synergistically formed gel by hydrogen bonding and the sol-gel transition temperatures were not affected by the ratio of DOP/XG. Moreover, values of hardness, viscosity, and elastic moduli (G') were up to the highest when DOP/XG was 7:3. However, rheological results (viscosity, G') of all the mixtures at 37.0 ℃ were significantly lower than that at 25.0 ℃, indicating the mixture can be applicated in products with the property of low-viscosity in the mouth, which is favorable for consumer to swallow. The decrease of XRD intensity and thermal stability, were observed with high xanthan content, indicating that xanthan ratios affected the properties of mixtures. This study offers a feasible guide for the construction and development of Dendrobium officinale polysaccharide-based food for people with dysphagia.