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Revealing the molecular structure and optical properties of starch granules due to the effect of α-amylase

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Revealing the molecular structure and optical properties of starch granules due to the effect of α-amylase

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Abstract: Starch is one of the most abundant polysaccharide found in plants and constitutes major part of the human diet. The morphology and chemical composition of the starch granules vary according to the plant species from which it is isolated from. In this study, we characterized starch granules from potato and corn using biochemical test; Dinitrosalicylic Acid Test (DNS), optical imaging and various spectroscopic methods. We have also investigated the effect of starch digesting enzyme (alpha amylase) on potato and corn starch at varying temperature and pH. The basic morphology was obtained by optical microscopy, , the chemical composition of the starch granules was investigated by Fourier Transform Infrared (FTIR) Spectroscopy and the crystallinity was studied using X-Ray Diffractometer (XRD).