



## 信息速递

- 实验室动态 >
- 通知公告 >
- 学术交流 >
- 近期发表论文**
- 设备设施 >
- 联系我们 >

## 近期发表论文

首页 > 信息速递 > 近期发表论文 > 正文

### Structural, thermal, and hydrolysis properties of large and small granules from C-type starches of four Chinese chestnut varieties

发布日期: 2019-07-04 浏览次数: 12

Int J Biol Macromol. 2019 Sep 15;137:712-720. doi: 10.1016/j.ijbiomac.2019.07.023. Epub 2019 Jul 4

Liu T, Ma M, Guo K, Hu G, Zhang L, Wei C

#### Abstract

Large and small granules were separated from C-type starches of four Chinese chestnut varieties growing in the same environment. They had similar amylose contents from 17.7% to 20.2% and showed C-type crystallinity. The large granules had relative crystallinity from 19.2% to 20.3%, ordered degree from 0.672 to 0.706, and lamellar peak intensity from 233.2 to 267.1, but small granules had relative crystallinity from 16.2% to 18.2%, ordered degree from 0.635 to 0.663, and lamellar peak intensity from 201.6 to 213.1. The gelatinization peak temperatures ranged from 62.6 to 65.7 °C in large granules but from 60.3 to 61.7 °C in small granules, and enthalpy variation did from 12.5 to 13.7 J/g in large granules but from 10.1 to 11.7 J/g in small granules. Both large and small granules showed biphasic hydrolysis. Though small granules had significantly higher hydrolysis rate than large granules, but they had similar total hydrolysis extent during whole hydrolysis. The granule size had significantly positive relationships with relative crystallinity, ordered degree, lamellar peak intensity, and gelatinization temperature and enthalpy variation, but was negatively correlated to hydrolysis rate. The principal component analysis was conducted to reveal the interrelationships among different starch properties and the variations among different starches.

**Key words:** Chinese chestnut; Granule size; Hydrolysis properties; Starch; Structural properties; Thermal properties

<https://www.ncbi.nlm.nih.gov/pubmed/312798913A+An+Efficient+and+Powerful+Methodology+To+Reveal+Karyotypic+and+Chromosomal+Evolution>

