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Debranching of pea starch using pullulanase and ultrasonication synergistically to enhance slowly digestible and resistant starch

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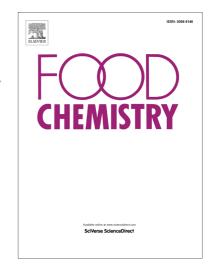
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Debranching of pea starch using pullulanase and ultrasonication synergistically to enhance slowly digestible and resistant starch

Running title: Debranching using pullulanase and ultrasound to enhance SDS and RS Zhan-Hui Lu ^a, Nicholas Belanger ^{a, b}, Elizabeth Donner ^a, Qiang Liu ^{a*}

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Abbreviations: DPS, debranched pea starch; P, pullulanase; npun, new pullulanase unit Novo; U, ultrasonication; DPS-P, DPS by P alone; DPS-U, DPS by U alone; DPS-PU, DPS by simultaneous P and U; RDS, rapidly digestible starch; SDS, slowly digestible starch; RS, resistant starch; DP, degree of polymerization; DSC, differential scanning calorimeter; T_0 , T_p and T_c , onset, peak and conclusion temperatures; ΔH , transition enthalpy; HPSEC, high-performance size-exclusion chromatography; M_w , molecular weight; RI, refractive index; RV, retention volume.

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