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## Cellulose nanocrystals from grape pomace: production, properties and cytotoxicity assessment

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### HIGHLIGHTS:

- Cellulose extraction from grape pomace can be used to produce CNCs
- CNCs can be obtained through sequential acid hydrolysis and ultrasound processes
- Ultrasound led to needle-shaped CNCs and apparently more dispersed suspensions
- Caco-2 cells viability confirmed the non-toxicity of CNCs

### Abstract

Cellulose nanocrystals (CNCs) were obtained from grape pomace through chemical and physical pretreatments. Bleached cellulose pulp was subjected to acid hydrolysis (AH) for 30 or 60 min and an ultrasound treatment to obtain CNCs (AH<sub>30S</sub> and AH<sub>60S</sub>). Compositional analyses of untreated (UGP) and pretreated (PGP) grape pomace showed the effectiveness of pretreatment in removing non-cellulosic components, recovering

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