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The sustainable synthesis of biosourced terpenoid-based (meth)acrylates using the CHEM21 green metrics toolkit

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PURPOSE OF THE ABSTRACT

Terpenes are a class of natural products, extracted from various plants and trees. Their remarkable structural diversity offers versatile functionalization possibilities when incorporated in polymers. This advantage has attracted an increasing interest in recent years in polymer chemistry. A problem to overcome is the low reactivity towards radical polymerization of the double bonds characteristic to terpenes. The modification of these structures circumvents these issues.

Starting from terpenoids, a subclass of terpenes, a range of one-step methods were evaluated to synthesize terpenoid (meth)acrylates within the framework of the recently reported CHEM21 green metrics toolkit. This toolkit was established to give the possibility to monitor, measure and compare methodologies in terms of their green credentials and is seen as a quantitative extension to 'The 12 principles of green chemistry'.

By doing this evaluation, we hope it translates to a widespread mindset in other sections of chemistry to advertise and encourage the use of greener and more sustainable techniques.

FIGURES

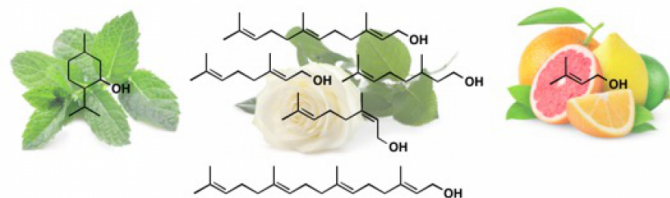


FIGURE 1

Common biosourced terpenoids

Terpenoids originate from various resources in Nature as depicted in the figure.

FIGURE 2

KEYWORDS

Terpenoids | CHEM21 | Acrylates | Sustainable

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