



A 1:1 pharmaceutical cocrystal of myricetin in combination with uncommon piracetam conformer: X-ray single crystal analysis and mechanochemical synthesis.

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Rok wydania

2014

Czasopismo

Journal of Molecular
Structure

Numer woluminu

1058

Strony

114-121

DOI

10.1016/j.molstruc.2013.10.071

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Combination of two Active Pharmaceutical Ingredients, myricetin and piracetam, yields a 1:1 cocrystal characterized by X-ray single-crystal and powder diffraction, Raman spectroscopy, ^1H NMR, thermal analysis (DSC and TG-DTA) methods. Constituents of the cocrystalline phase were also investigated in terms of Hirshfeld surfaces. Compounds in their neutral forms cocrystallize in the $Pna2_1$ space group of orthorhombic system. Notably, piracetam adopts an uncommon conformation, not encountered in its cocrystals previously described. In the crystal lattice, a three-dimensional hydrogen-bonded network is observed, including formation of a 2D molecular scaffolding motif. A scale-up procedure is readily available with use of solvent-drop grinding method, in which application of a variety of common solvents leads to formation of the cocrystal, as confirmed by XRPD and Raman spectroscopy.

Słowa kluczowe

Myricetin, Piracetam, Cocrystals, Solvent-drop grinding, Mechanochemistry, X-ray crystallography

Adres publiczny

<http://dx.doi.org/10.1016/j.molstruc.2013.10.071>

Strona internetowa wydawcy

<http://www.elsevier.com>