



Assessing compatibility of excipients selected for sustained release formulation of bilberry leaf extract by means of FTIR and TGA



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Topicality

The efficacy of herbal drugs is often limited by their low bioavailability. A strategy to overcome the problem is special excipients in drug formulation

Aim

Assess the compatibility of **bilberry leaf powder extract (BLPE)** with six excipients selected for sustained-release tablet formulation

Excipients

- Eudragit L100
- Methocel K4M
- Methocel K100LV
- Avicel PH-101
- Plasdone S-630
- Magnesium stearate

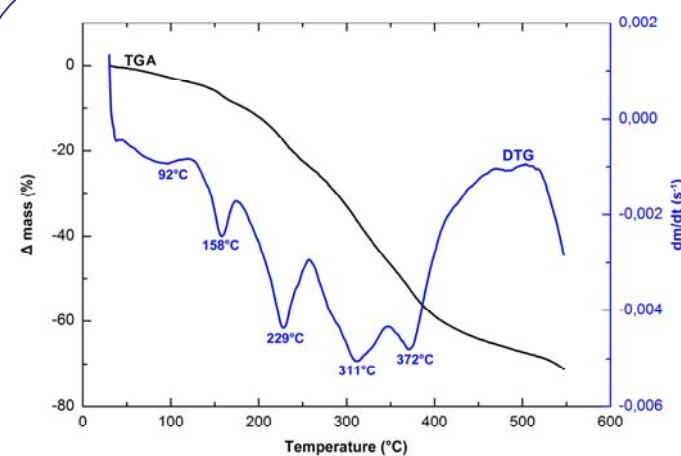
Bilberry

Antidiabetic, antiobesity, lipid-lowering activities



Experimental

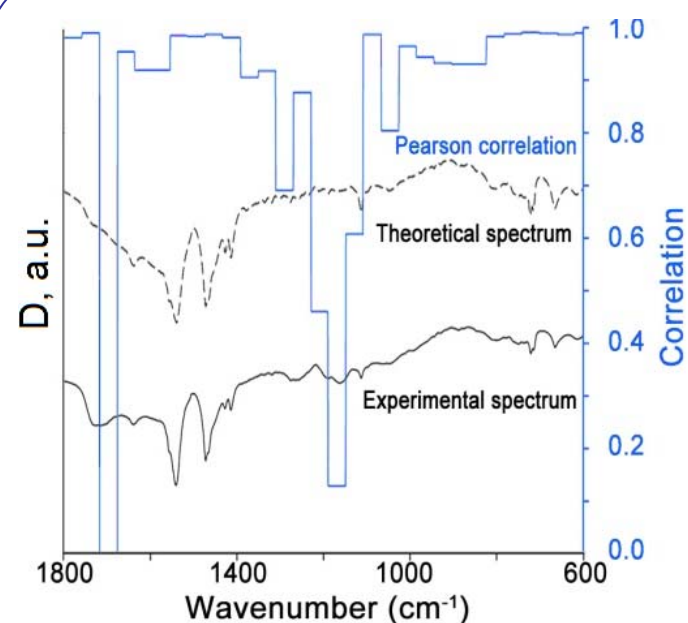
FTIR spectra and thermogravimetry analysis profiles (TGA-DTG) were obtained both for individual substances (BLPE and the excipients) and for their binary mixtures 1:1 by mass. Pearson correlation analysis was performed to detect incompatibilities between BLPE and the excipients examined



TGA-DTG profiles of bilberry leaf powder extract with the indication of peak temperatures of mass loss events

Conclusions

- ✓ The results obtained showed that BLPE is compatible with all the excipients with the only exception of magnesium stearate.
- ✓ Physicochemical interactions of BLPE with magnesium stearate apparently resulting in the formation of stearic acid and alkalization of the medium apparently resulting in the formation of stearic acid and alkalization of the medium and/or intermolecular complexes formation.
- ✓ Generally, the data obtained evidence on possibility of formulation development for BLPE.



Pearson correlation analysis of FTIR spectra for binary mixtures of BLPE and magnesium stearate