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Drug Development and Industrial Pharmacy
2020, Pages 1-11

Formulation development of paracetamol instant jelly for pediatric USE (Article)

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Abstract

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Objective: Paracetamol is a common antipyretic and analgesic medicine used in childhood illness by parents and physicians worldwide. Paracetamol has a bitter taste that is considered as a significant barrier for drug administration. This study aimed to develop an oral dosage form that is palatable and easy to swallow by pediatric patients as well as to overcome the shortcomings of liquid formulations. **Methods:** The paracetamol was encapsulated in beads, which were prepared mainly from alginate and chitosan through electrospray technique. The paracetamol beads were sprinkled on the instant jelly prepared from glycine, ι-carrageenan and calcium lactate gluconate. The paracetamol instant jelly characteristics, in terms of physical appearance, texture, rheology, in vitro drug release and palatability were assessed on a human volunteer. **Results:** The paracetamol instant jelly was easily reconstituted in 20 mL of water within 2 min to form jelly with acceptable consistency and texture. The jelly must be ingested within 30 min after reconstitution to avoid the bitter taste. The palatability assessment carried out on 12 human subjects established the similar palatability and texture of the paracetamol instant jelly dosage comparable to the commercial paracetamol suspension and was found to be even better in overcoming the aftertaste of paracetamol. **Conclusion:** Such findings indicate that paracetamol instant jelly will compensate for the use of sweetening and flavoring agents as well as develop pediatric dosage forms with limited undesired excipients. © 2020, © 2020 Informa UK Limited, trading as Taylor & Francis Group.

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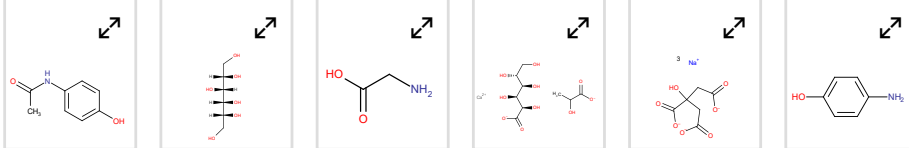
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Beads jelly palatability paracetamol taste masking

Indexed keywords

EMTREE drug terms: alginic acid calcium lactate gluconate carrageenan chitosan drug additive glycine paracetamol unclassified drug

EMTREE medical terms: analysis Article bitter taste chemical composition controlled study differential scanning calorimetry drug dosage form drug formulation drug release drug solubility drug stability drug use electrospray encapsulation flow kinetics Fourier transform infrared spectroscopy human human experiment in vitro study instant jelly liquid mathematical model moisture palatability particle size pediatric patient pediatrics physical appearance physical chemistry powder suspension swallowing texture profile analysis

Chemicals and CAS Registry Numbers:

alginic acid, 28961-37-7, 29894-36-8, 9005-32-7, 9005-38-3; carrageenan, 9000-07-1, 9049-05-2, 9061-82-9, 9064-57-7; chitosan, 9012-76-4; glycine, 56-40-6, 6000-43-7, 6000-44-8; paracetamol, 103-90-2

Drug tradename:

panadol

Manufacturers:

Drug manufacturer:

zhengjiankangle, China

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International Islamic University Malaysia		IIUM
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