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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.

SciVal Topic Prominence

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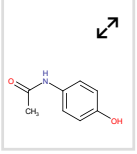
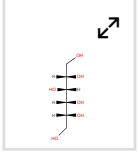
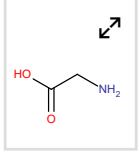
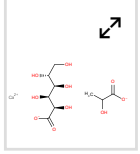
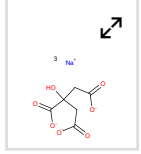
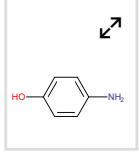

Author keywords

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

Funding details

Funding sponsor	Funding number	Acronym
International Islamic University Malaysia		IIUM
International Islamic University Malaysia	P-RIGS18-026-0026	IIUM

Funding text

This work was funded by International Islamic University Malaysia Research Initiative Grant Scheme [Grant Number. P-RIGS18-026-0026]. The authors thank Assoc. Prof. Dr. Farahidah Muhammad and the department of pharmaceutical technology at IIUM for technical and facilitation support.

ISSN: 03639045
CODEN: DDIPD
Source Type: Journal
Original language: English
DOI: 10.1080/03639045.2020.1791165
PubMed ID: 32619118
Document Type: Article
Publisher: Taylor and Francis Ltd.

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