

POSTERS

P15 - HOT MELT EXTRUDATES FOR CONTROLLED DRUG DELIVERY

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PURPOSE

To prepare and characterize drug loaded hot melt extrudates based on hydrophobic polymers allowing for controlled/sustained drug release in GIT.

METHODS

30 % Verapamil hydrochloride were extruded with a mixture of plasticized ethylcellulose with Dibutyl sebacate, and polyethylene glycol 6000 in a co-rotating twin-screw-extruder with 4 heating-zones, and through the 1 mm die orifice. Cylindrical extrudates as well as physical mixture were characterized by DSC measurements (heating rate at 10°C/min). In-vitro drug release was measured using USP apparatus II (37 °C; 900

mL; 100 rpm) in 0.1 M HCl (UV drug detection at 278 nm).

RESULTS

DSC measurements have revealed that verapamil HCl into the extrudates is in crystalline state which decreased with the increase of the extrusion temperature. The later has influenced the release rate of verapamil HCl (60 % at T_m=124 °C, versus 40 % at 90 °C), probably due to the good distribution and homogeneity of drug within the extrudates.

CONCLUSIONS

The obtained knowledge provided the feasibility of verapamil HCl hot melt extrudates for drug delivery.