Eksipien sambungsilang dari koproses-polivinil alkohol-amilosa sebagai matriks pada sediaan tablet lepas lambat = Cross linked excipient of coprocessed polyvinyl-alcohol amylose as matrix for sustained release tablet.

Astried Leonyza, author

Abstrak

Sustained release tablet is solid oral dosage form which is designed to release drugs slowly in the body. This research was conducted to make and characterize the cross-linked excipient of coprocessed polyvinyl alcohol-amylose as matrix for sustained release tablet with diclofenac sodium as the model drug. Cross-linked excipient of coprocessed polyvinyl alcohol-amylose (CL6 Co-PVA-A) was resulted from coprocessed excipient of polyvinyl alcohol-amylose (Co-PVA-A) that have been crosslinked with sodium trimetaphosphate. Meanwhile, Co-PVA-A was originated from two excipients, which are polyvinyl alcohol and amylose that have been coprocessed with ratio 1:2, 1:1, and 2:1. Co-PVA-A and CL6 Co-PVA-A properties were characterized physically, chemically, and functionally. Co-PVA-A and CL6 Co-PVA-A were formulated with dry granulation method in sustained release tablet as matrix. Furthermore, the sustained release tablets were evaluated and the drug release profiles were studied. As results, substitution degree of CL6 Co-PVA-A 1:2, 1:1, and 2:1 are respectively 0.080; 0.069; and 0.086. Those excipients have good swelling capability and gel strength that are 5.02; 5.22; and 5.12 gf. All sustained release tablet passed the requirement of weight variation, hardness, friability, and assay. CL6 Co-PVA-A as matrices (F1, F2, and F3) showed first order (F1) and zero order (F2 and F3) drug release kinetics. This study suggested that the tablets can be applied as sustained release tablets and retard drug release up to 16 hours.
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