Taste-Masked Spray Dried Microparticles for Intra-Oral Dispersible Tablets of Lornoxicam

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Abstract:

Taste-masked microspheres of lornoxicam (LOX) were prepared by spray drying technique using hydroxypropyl methyl cellulose (HPMC) or polyvinyl pyrrolidone (PVP) as polymers in different mass ratios. The effect of polymers and drug-polymer mass ratios on the taste-masking and release properties of co-spray dried microparticles (CSDM) was investigated. CSDM masked the bitter taste of the LOX and enhanced its dissolution rate as compared to pure drug. This improvement in drug dissolution was attributed to both the solubilizing effect of the polymers and physical change in the drug crystal. CSDM formulae with drug, HPMC and PVP (1:4:4) were selected for the preparation of intra-oral tablets (IOTs) because it showed the highest drug release. Three superdisintegrants were used for the preparation of LOX IOTs. IOTs containing croscarmellose sodium released the drug faster than that containing sodium starch and this was probably due to the binding effect of PVP. The anti-inflammatory effects of the prepared LOX IOTs were studied using rat hind paw edema method. The results revealed that IOTs containing croscarmellose sodium showed significant inflammation size reduction in rat hind paw. Palatability studies on human volunteers showed acceptable taste and mouth feel of developed formulation.

Keywords:

Anti-inflammatory effects, Intraoral dispersible tablet, Lornoxicam, Microparticles, Polymer.

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