

Abstract

The present invention relates to new crystals A, B and F of lobaplatin as well as preparation methods therefor and pharmaceutical applications thereof. Lobaplatin crystal A has a melting point T_{m.p.} of $220\pm 5^{\circ}\text{C}$ and is obtained by adding a lobaplatin trihydrate to a suspension crystallization solvent. Lobaplatin crystal B has a melting point T_{m.p.} of $230\pm 5^{\circ}\text{C}$ and is obtained by performing solvent evaporation on a lobaplatin trihydrate or by adding a solvent to a lobaplatin dihydrate, and performing room temperature evaporation or solvating-out crystallization and then drying. Lobaplatin crystal F has a melting point T_{m.p.} of $229\pm 5^{\circ}\text{C}$ and is obtained by adding methanol or ethanol to a lobaplatin dihydrate, stirring at room temperature until solids are dissolved, filtering out insolubles, slowly adding an organic solvent, crystallizing out, separating the crystal and drying the crystal. Compared with the existing lobaplatin and lobaplatin trihydrate, the lobaplatin crystals A, B and F have better stability and solubility, are more suitable for preparation of various forms of pharmaceutical preparations, are more suitable for storage and use, and can be better used for treating cancers such as breast cancer, small cell lung cancer, or chronic myeloid leukemia.

(Figure 2)