

ABSTRACT

An object of the present invention is to provide a process for enabling the production of a particulate composition containing crystalline trehalose dihydrate in a higher production yield against starch through consistent steps by using starch as a material.

The above object is solved by providing a process for producing a particulate composition containing crystalline α,α -trehalose dihydrate which comprises α,α -trehalose in an amount of 98.0% by weight or more, on a dry solid basis, characterized in that it comprises the steps of allowing to act on liquefied starch an α -glycosyltrehalose-forming enzyme derived from a microorganism of the genus *Arthrobacter* and a trehalose-releasing enzyme derived from a microorganism of the genus *Arthrobacter* along with a starch debranching enzyme and a cyclomaltodextrin glucanotransferase; allowing glucoamylase to act on the resulting mixture to obtain a saccharide solution containing α,α -trehalose; precipitating crystalline α,α -trehalose dihydrate from the above saccharide solution; collecting the precipitated crystalline α,α -trehalose dihydrate by a centrifuge; and ageing and drying the collected crystals; wherein a natural or recombinant cyclomaltodextrin glucanotransferase derived from a microorganism of the genus *Paenibacillus* or a mutant enzyme thereof is used as the cyclomaltodextrin glucanotransferase to increase the α,α -trehalose content in the saccharide solution to over 86.0% by weight, on a dry solid basis, without

passing through a fractionation step by column chromatography.