二氧化碳對液態培養獸疫鏈球菌透明質酸產量及其分子特性之影響 = Effects of CO2 on production and characterization of ...

何嘉育、徐泰浩

E-mail: 9901180@mail.dyu.edu.tw

摘 要

透明質酸(Hyaluronic acid，HA)又稱為玻尿酸，其由D-葡萄糖醛酸和N-乙醯胺基葡萄糖相互交替鍵結而成之直鏈多醣體，平均分子量104~107 Dalton，目前已被廣泛應用於醫學及化妝品等。本研究探討獸疫鏈球菌(Streptococcus zooepidemicus) BCRC15414在37℃、150rpm及控制pH值約在7.0之環境下培養，探討通氣因子對透明質酸產量之影響。通氣因子分為空氣及二氧化碳，通氣量為1vvm，在此二種氣體中比較出較佳之通氣因子，再分別以不同通氣量(0.5vvm、1.5vvm及2.0vvm) 進行試驗，以期能找出更適透明質酸生產之通氣條件。結果顯示，以二氧化碳為通氣因子，通氣量1vvm培養至第六小時，透明質酸產量可達最高產量為0.256 g/L，明顯高於以空氣為通氣因子，通氣量1vvm(0.210 g/L, 4hr)。因此後續再以二氧化碳為醱酵培養之主要通氣成分，發現透明質酸產量於通氣量1vvm時可得最高產量之透明質酸，接著依序為2.0vvm(0.234 g/L, 10hr)、1.5vvm(0.187 g/L, 24hr)、0.5vvm (0.176 g/L, 8hr)。由以上數據得知，獸疫鏈球菌在生產透明質酸時，會因為不同進氣條件及培養時間而影響產量。由不同通氣因子及通氣量之實驗結果，可得知最適通氣條件為二氧化碳，於通氣量1vvm下在第六小時時可產出0.256 g/L之透明質酸。

關鍵詞 : 獸疫鏈球菌 ; 透明質酸 ; 二氧化碳 ; 空氣 ; 通氣量 ; 醱酵醱酵醱酵

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