

EFFECT OF CHEMICAL DEFINED AND NATURAL INFUSION MEDIA AND CULTURAL TEMPERATURE ON MYCELIUM AND POLYSACCHARIDE FROM MAITA

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ABSTRACT

GRIFOLA FRONDOSA IS A KIND OF FUNGI WHICH CAN BE USED IN MEDICINE, THEREFORE IT HAS HIGH ECONOMIC VALUE. PLENTY OF RESEARCHES ON THE MEDICAL EFFECTS OF GRIFOLA FRONDOSA HAVE POINT -ED OUT THAT IT HAS POSITIVE EFFECTS ON HEALTH IN TERMS OF ANTITUMOR, IMMUNOLOGICAL ENHANC -EMENT, ANTIDIABETIC AND ANTI-HIV....ETC. IT IS NOW A POPULAR HEALTH-FOOD PRODUCT IN CHINA AND JAPAN.ACCORDING TO THE RELATED STUDIES,EMPLOYING MYCELIUM OF SUBMERGED CULTURE TO GROW FUNGI HAS THE ADVANTAGES OF MINIMIZING GROWING TIME,STABLIZING THE QUALITY,AND LOWERING CO -ST.IN ADDITION,IT ALSO MAKES THE BIOLOGICAL ACTIVITY EASY TO CONTROL.THUS,SUBMERGED CULTU -RE OF MYCELIUM AND POLYSACCHARIDE HAVE BEEN ADOPTED IN THIS STUDY TO GROW GRIFOLA FRONDOS .THIS STUDY INVESTIGATES THE PROCESS OF THE GROWTH OF GRIFOLA FRONDOSA IN TERMS OF THE FOL -LOWING ISSUES : (1) THE DIFFERENCE OF THE MORPHOLOGICAL DEVELOPMENT OF GRIFOLA FRONDOSA (2) THE DIFFERENT GROWING EFFECTS CAUSED BY DIFFERENT ELEMENTS OF MEDIA IN THE SHAKING BOT -TLES (3) THE DIFFERENT GROWING EFFECTS CAUSED BY DIFFERENT COMPLEX MEDIA IN THE SHAKING BOTTLES (4) THE GROWING EFFECTS OF USING FERMENTOR TANK TO GROW GRIFOLA FRONDOSA. (5) THE VARIATION OF VISCOSITY, ENDOPOLYSACCHARIDE AND EXPOLYSACCHARIDE IN VARIED TEMPERATURES (6) THE VARIANCES OF THE COMPONENTS AND THE MOLECULAR WEIGHT OF POLYSACCHARIDE. THE STUDY SHOWS THAT, IN SOLID CULTURE, THE BEST GROWING SPEED OF THE COLONY IS ACHIEVED UNDER THE CONDITION OF GLUCOSE AS CARBON SOURCE, AMMONIUM CHOLRIDE AS NITROGEN SOURCE,THE RATIO OF CARBON AND NITROGEN AS FIVE TO ONE,AND TRACE ELEMENT AS ONE PERCENT.IN LIQUID CUL -TURE,THE HIGHEST MYCELIUM BIOMASS IS ACHIEVED UNDER THE CONDITION OF GLUCOSE AS CARBON SO -URCE,AMMONIUM SULFATE AS NITROGEN SOURCE,THE RATIO OF CARBON AND NITROGEN AS TWENTY TO ONE AND TRACE ELEMENT AS ONE PERCENT,THE INITIAL PH AS 5.5,AND GLUCOSE CONCENTRATION AS TWO PE -RCENT.REGARDING THE DIFFERENT GROWING EFFECTS CAUSED BY DIFFERENT COMPLEX MEDIA IN THE SH -AKING BOTTLES,IN THIS STUDY,AMONG THE CULTURE CONDITIONS OF THE SIX COMPLEX MEDIUM,THE 10% BROWN RICE POWDER ACHIEVED THE HIGHEST MYCELIUM BIOMASS.THE STUDY ALSO SHOWS THAT USING 5L FERMENTOR TANK TO GROW GRIFOLA FRONDOSA,N1 MEDIUM PROVES TO BE THE BEST MEDIUM FOR MYCELIA PRODUCTION.IT IS ALSO FOUND THAT THE OPTIMUN TEMPERATURE FOR PRODUCING POLYSACCHARIDE IS 25 .THE SUBJECT THAT HAS THE HIGHEST CONTENTS OF ENDOPOLYSACCHARIDE IS GRIFOLA FRONDOSA 36355.THE SUBJECT THAT HAS THE HIGHEST CONTENTS OF EXPOLYSACCHARIDE IS GRIFOLA FRONDOSA 36 -434.THE MOLECULAR WEIGHT OF ENDOPOLYSACCHARIDE IS 103,900,AND THE MOLECULAR WEIGHT OF EXP -OLYSACCHARIDE IS 70,200.THE ANALYSIS OF THE POLYSACCHARIDE SHOWS THAT IT INCLUDES GLUCOSE AND XYLOSE.

Keywords : GRIFOLA FRONDOSA, MYCELIUM, MORPHOLOGY DEVELOPMENT, CHEMICALLY DEFINFD MEDIUM, COMPLEX MEDIUM, POLYSACCHARIDE

Table of Contents

壹、前言--P1 貳、文獻回顧--P2 2.1 蓮花菌之介紹--P2 2.2蓮花菌之生態特徵--P3 2.3蓮花菌的一般成份分析--P4 2.3.1一般化學成分--P4 2.3.2游離胺基酸--P5 2.3.3脂質--P6 2.3.4可溶性糖--P10 2.3.5有機酸--P11 2.3.6酵素--P12 2.3.7核酸--P13 2.4蓮花菌的機能性成份分析--P13 2.4.1蓮花菌多糖--P13 2.4.2凝集素--P20 2.5蓮花菌之培養--P21 2.5.1蓮花菌之固態培養--P21 2.5.2蓮花菌之浸液培養--P29 2.6蓮花菌的生物活性--P35 參、材料與方法 3.1試驗菌株--P41 3.2菌種的活化--P41 3.3母種培養--P41 3.4原種培養--P42 3.5菌株形態分類--P42 3.6化學合成培養基對蓮花菌之影響--P43 3.7複合培養基對蓮花菌之影響--P45 3.8五

公升小型發酵槽生長條件之探討--P46 3.9分析方法--P46 肆、結果與討論 4.1蓮花菌的形態發生--P51 4.1.1利用位相差顯微鏡觀察蓮花菌之形態發生--P51 4.1.2蓮花菌菌落的外觀與形成速率--P54 4.2化學合成培養基組成對固態培養蓮花菌菌落生長速率之影響--P59 4.2.1不同碳源對蓮花菌菌落生長速率影響--P59 4.2.2不同氮源對蓮花菌菌絲體生長影響--P60 4.2.3不同碳氮比對蓮花菌菌絲體生長影響--P61 4.2.4不同濃度礦物鹽溶液對蓮花菌菌絲體生長影響--P61 4.3化學合成培養基組成對搖瓶浸液培養蓮花菌菌絲體生物質量之影響--P69 4.3.1不同起始PH值對蓮花菌菌絲體生長之影響--P69 4.3.2不同碳源對蓮花菌菌絲體生長之影響--P71 4.3.3不同氮源對蓮花菌菌絲體生長之影響--P72 4.3.4不同碳氮比對蓮花菌菌絲體生長之影響--P73 4.3.5不同礦物鹽溶液對蓮花菌菌絲體生長之影響--P74 4.3.6不同葡萄糖含量對蓮花菌菌絲體生長之影響--P76 4.4複合培養基組成對浸液培養蓮花菌菌絲體生物質量之影響--P89 4.4.1不同複合培養基間PH值之變化--P89 4.4.2不同複合培養基間菌絲體生物質量之變化--P91 4.4.3不同複合培養基間還原糖之變化--P94 4.5五公升發酵槽中不同培養基組成對蓮花菌菌絲體生物質量之影響--P103 4.5.1培養基PH值之變化--P103 4.5.2菌絲體生物質量之變化--P104 4.5.3培養基中還原糖之變化--P106 4.6不同溫度下液態培養蓮花菌生成胞外多醣體之探討--P112 4.6.1不同蓮花菌菌絲體於20 溫度下搖瓶培養--P112 4.6.2不同蓮花菌菌絲體於25 溫度下搖瓶培養--P114 4.6.3不同蓮花菌菌絲體於30 溫度下搖瓶培養--P116 4.6.4不同蓮花菌菌絲體於35 溫度下搖瓶培養--P116 4.6.5 CCRC 36355於不同溫度下搖瓶培養--P117 4.6.6 CCRC 36356於不同溫度下搖瓶培養--P117 4.6.7 CCRC 36357於不同溫度下搖瓶培養--P118 4.6.8 CCRC 36283於不同溫度下搖瓶培養--P119 4.6.9 CCRC 36286於不同溫度下搖瓶培養--P119 4.6.10 CCRC 36434於不同溫度下搖瓶培養--P120 4.7機能性多醣體成份的分析--P130 4.7.1蓮花菌菌絲體胞內多醣體及胞外多醣體分子量分佈--P130 4.7.2不同菌株蓮花菌浸液培養生成之菌絲體水溶性乙醇澱析醣類及選擇性單糖含量之探討--P131 4.7.3不同菌株蓮花菌浸液培養生成之發酵液水溶性乙醇澱析醣類及選擇性單糖含量之探討--P132 伍、結論--P138 參考文獻--P139

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