Phytochemical studies on digitalis lanata ehrh by using tissue culture techniques.

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For induction of digitalis lanata callus different explants were cultured on MS medium supplemented with NAA combined with BA at different concentrations. The highest callus formation was obtained from leaf cotyledon explants on medium contained NAA plus BA at all concentrations. whereas, the optimal phytohormonal combination for growth and maintenance of hypocotyl derived calli was 1 mg/l BA with 0.11 mg/l NAA. The effect of carbon source on growth of digitalis lanata callus was investigated. This carbon source stimulated growth and increase digitoxin content from the calli.The optimum concentration of sucrose was 4% and 3% glucose improved callus growth (16.35gm and 24.34gm) and digitoxin content (125.2µg/g dw and 143.58µg/g dw) as respectively .Casein hydrolysaet, usual component of the medium, was not enhanced for either growth or digitoxin content during the two passages examined. The optimal phytohormonal combination, improved callus induction, callus growth and the digitoxin content per unit weight (650.2 µg/g dw at first passage and 280.0 µg/g dw at second passage at (1.0 mg/l BA; 0.165mg/l NAA). The cotyledon leaf explants gives successfully explants transferred onto MS medium with various levels of PGRs and carbohydrates to determine the optimum callus induction, callus growth, and digitoxin content. The callus induction, growth and digitoxin content were highly influenced by the type and concentration of carbon sources and PGRs used.the results of this study revealed that, The optimum concentration of glucose was 3% improved callus growth (24.34g) at (1mg/l BA with 0.11 mg/l NAA) and (22.3g) at (1mg/l BA with 0.165 mg/l NAA),and the optimum concentration of sucrose was 4% improved callus growth (16.35g) at (1mg/l BA with 0.11 mg/l NAA) and (15.22g) at (1mg/l BA with 0.165 mg/l NAA),while The optimum concentration of mannitol was 1% improved callus growth (10.5g) at (1mg/l BA with 0.11 mg/l NAA) and (9.0g) at (1mg/l BA with 0.165 mg/l NAA).But Casein hydrolysaet , usual component of the medium, was not enhanced callus growth during the two passages examined. The results of this study concluded that, The optimal Carbon source for callus growth was Glucose at 30 gm/l and Sucrose at 40gm/l.The results of this study revealed that, The optimum concentration of glucose was 3% improved the digitoxin content (143.58µg/g dw) at (1mg/l BA with 0.11 mg/l NAA) and (230.8µg/g dw) at (1mg/l BA with 0.165 mg/l NAA).and The optimum concentration of sucrose was 4% improved the digitoxin content (125.2gm) at (1mg/l BA with 0.11 mg/l NAA) and (210.3µg/g dw) at (1mg/l BA with 0.165 mg/l NAA). While The optimum concentration of manitole was 2%

improved the digitoxin content (79.84 µg/g dw) at (1mg/l BA with 0.11 mg/l NAA) and (167.2µg/g dw) at (1mg/l BA with 0.165 mg/l NAA).But Casein hydrolysaet , usual component of the medium, was not enhanced digitoxin formation during the two passages examined.from this study resulted that, the growth and digitoxin content were highly influenced by the type and concentration of carbon sources and PGRs used.ABSTRACTFor induction of digitalis lanata callus different explants were cultured on MS medium supplemented with NAA combined with BA at different concentrations. The highest callus formation was obtained from leaf cotyledon explants on medium contained NAA plus BA at all concentrations. whereas, the optimal phytohormonal combination for growth and maintenance of hypocotyl derived calli was 1 mg/l BA with 0.11 mg/l NAA. The effect of carbon source on growth of digitalis lanata callus was investigated. This carbon source stimulated growth and increase digitoxin content from the calli.The optimum concentration of sucrose was 4% and 3% glucose improved callus growth (16.35gm and 24.34gm) and digitoxin content (125.2µg/g dw and 143.58µg/g dw) as respectively .Casein hydrolysaet, usual component of the medium, was not enhanced for either growth or digitoxin content during the two passages examined. The optimal phytohormonal combination, improved callus induction, callus growth and the digitoxin content per unit weight (650.2 µg/g dw at first passage and 280.0 µg/g dw at second passage at (1.0 mg/l BA; 0.165mg/l NAA). The cotyledon leaf explants gives successfully explants transferred onto MS medium with various levels of PGRs and carbohydrates to determine the optimum callus induction, callus growth, and digitoxin content. The callus induction, growth and digitoxin content were highly influenced by the type and concentration of carbon sources and PGRs used.the results of this study revealed that, The optimum concentration of glucose was 3% improved callus growth (24.34g) at (1mg/l BA with 0.11 mg/l NAA) and (22.3g) at (1mg/l BA with 0.165 mg/l NAA),and the optimum concentration of sucrose was 4% improved callus growth (16.35g) at (1mg/l BA with 0.11 mg/l NAA) and (15.22g) at (1mg/l BA with 0.165 mg/l NAA),while The optimum concentration of mannitol was 1% improved callus growth (10.5g) at (1mg/l BA with 0.11 mg/l NAA) and (9.0g) at (1mg/l BA with 0.165 mg/l NAA).But Casein hydrolysaet , usual component of the medium, was not enhanced callus growth during the two passages examined. The results of this study concluded that, The optimal Carbon source for callus growth was Glucose at 30 gm/l and Sucrose at 40gm/l.The results of this study revealed that, The optimum concentration of glucose was 3% improved the digitoxin content (143.58µg/g dw) at (1mg/l BA with 0.11 mg/l NAA) and (230.8µg/g dw) at (1mg/l BA with 0.165 mg/l NAA).and The optimum concentration of sucrose was 4% improved the digitoxin content (125.2gm) at (1mg/l BA with 0.11 mg/l NAA) and (210.3µg/g dw) at (1mg/l BA with 0.165 mg/l NAA). While The optimum concentration of manitole was 2% improved the digitoxin content (79.84 µg/g dw) at (1mg/l BA with 0.11 mg/l NAA) and (167.2µg/g dw) at (1mg/l BA with 0.165 mg/l NAA).But Casein hydrolysaet , usual component of the medium, was not enhanced digitoxin formation during the two passages examined.from this study resulted that, the growth and digitoxin content were highly influenced by the type and concentration of carbon sources and PGRs used.