Enhanced Secretion and Stabilization of hGM-CSF in Transgenic Tobacco Shoot Cultures

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In previous studies, the level of recombinant protein, hGM-CSF, produced through tobacco shoot cultures was very low in the culture media. To improve the production of hGM-CSF in shoot cultures, pluronic F-68 which has been known to increase the permeability of protein was added in tobacco shoot cultures. Pluronic F-68 significantly stimulated the secretion of hGM-CSF through interaction with cell surface. The production of hGM-CSF was also increased by increasing of the sucrose concentration. Proteolytic enzyme existing shoot culture media has been known as a major reason for loss of secreted hGM-CSF. Gelatin was applied as a stabilizing agent to shoot culture media to increase the hGM-CSF production. Gelatin was a competitive substrate for protease. The synergistic increase in hGM-CSF production could be achieved by application of pluronic F-68, high concentration of sucrose and gelatin simultaneously.

References

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