Gangadevi, V. & Muthumary, J. 2008. Isolation of *Colletotrichum gloeosporioides,* a novel endophytic taxol-producing fungus from the leaves of a medicinal plant, *Justicia gendarussa.* – Mycologia Balcanica **5**: 1-4.

Abstract. Taxol is a potent anticancer drug used widely in the treatment of a variety of cancers. An endophytic fungus *Colletotrichum gloeosporioides* (strain JGC-9) was isolated from *Justicia gendarussa,* a medicinal plant and screened for taxol production. The fungus was identified based on the morphology of the fungal culture and the characteristics of the spores and screened for taxol production. The amount of taxol produced by this endophytic fungus was quantified by HPLC and it produced 163.4 μg/L, thus the fungus can serve as a potential material for fungus engineering to improve the production of taxol. This fungal taxol isolated from the organic extract of this fungal culture also had strong cytotoxic activity towards BT 220, H116, Int 407, HL 251 and HLK 210 human cancer cells *in vitro*, tested by Apoptotic assay and it is indicated that with the increase of taxol concentration from 0.005 – 0.05 μM, taxol induced increased cell death through apoptosis. This fungus may serve as a potential material for fungal engineering to improve taxol production.

Key words: *Colletotrichum gloeosporioides,* endophytic fungus, medicinal plant, taxol production