IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 12, Issue 4, December 2021
Impact Factor: 5.731

Isolation, Identification and Molecular Characterization of Endophytic Fungi from Belpharis Maderaspatensis

Karthikeyan. S, Aryaman Das, Priyadharshini J, P. Vivek
Department of Bio-Engineering
Vels Institute of Science, Technology & Advanced Studies, Chennai
vivek.se@velsuniv.ac.in

Abstract: *Endophytes are an increasingly important area of research in many fields because of their chemical diversity and their ability to produce many novel secondary metabolites that can be utilized for fuel, medicine and agriculture. It is their chemical diversity that sparks profound interest in these organisms. The endophytic fungi are symbiotic fungi that grows between the intercellular spaces in the plant tissue without any visible change in the morphology of the leaf. They are non-pathogenic and help in the survival of the plant during stress conditions and helps in the nutrition uptake. The fresh leaves and stem of the plant was placed in PDA. The agar showed 5 different species of fungi, the fungi without visible spore was chosen as the target fungi. The fungal DNA was isolated and amplified in PCR using ITS Primer. It was identified by Gene sequencing and BLAST; the obtained sequence was then uploaded to the International Gene Bank and the accession number (MN577295.1) was obtained. Upon GC-MS analysis of ethyl acetate extract of Colletotrichumgloeosporioides revealed the presence of 39 bio active compounds. The Antimicrobial sensitivity test showed good zone of inhibition against Klebsiella pneumonia, E.coli and the zones were on par with third generation antibiotic Amikacin. Hence the endophyte Colletotrichumgloeosporioide spossess undeniable uses in both agricultural and pharmaceutical industries..*

Keywords: *Blepharismaderaspatensis*, *Colletotrichumgloeosporioides*, BLAST, GC-MS, Antimicrobial sensitivity

REFERENCES

[1]. Richardson, J.D., Kilo, S., Hargreaves, K.M., 1998. Cannabinoids reduce hyperalgesia and inflammation via interaction with peripheral CB1 receptors. Pain 75, 111-119.
[2]. Shu, Y.Z., 1998. Recent natural products based drug development: A pharmaceutical industry perspective. J. Nat.
[3]. Singh, S., Majumdar, D.K., 1995. Analgesic activity of fixed oil of Ocimum sanctum Linn (Tulsi) and its possible mechanism of action. Int J Pharmacogn 33, 188-192.
[4]. Skidmore, I., Whitehouse, M., 1967. Biochemical properties of antiinflammatory drugs X: the inhibition of serotonin formation in vitro and inhibition of the esterase activity of α-chymyotrysin. Biochem. Pharmacol. 16, 737-751.
[5]. Slinkard, K., Singleton, V.L., 1977. Total phenol analysis: Automation and comparison with manual methods. Am. J.
[6]. Suba, V., Murugesan, T., Kumaravelrajan, R., Mandal, S.C., Saha, B.P., 2005. Antiinflammatory, analgesic and antiperoxidative efficacy of BarlerialupulinaLindl. extract. Phytother. Res. 19, 695-699.
[7]. Talwar, S., Nandakumar, K., Nayak, P.G., Bansal, P., Mudgal, J., Mor, V., Rao, C.M., Lobo, R., 2011. Anti-inflammatory activity of Terminaliapaniculata bark extract against acute and chronic inflammation in rats. J. Ethnopharmacol. 134, 323-328.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 12, Issue 4, December 2021
Impact Factor: 5.731

[8]. Vane, J.R., Bolting, R.M., 1995. New insights into the mode of action of anti-inflammatory drugs. Inflam. Res. 44.

[9]. Williams, C.N., Honet, J.R.S., Harbone, J.B., Greenham, J., Eeagles, J., 1995. A biologically active lipophilic flavonols from Tanacetumparthenium. Phytochemistry 38, 267-270.

[10]. Winter, C., Risley, E., Nuss, O., 1962. Carrageenin-induced inflammation in the hind limb of the rat. Federation Proceedings. 46, 118-126.

[11]. Woldesellassie, M., Eyasu, M., Kelbessa, U., 2011. In vivo antiinflammatory activities of leaf extracts of Ocimumlamiifolium in mice model. J. Ethnopharmacol. 134, 32-36.

[12]. Lavanya R, Uma MS, Harish G, Raj JB, Kamali S, Hemamalani D, Varma JB and Reddy CU:

[13]. Investigation of in vitro anti-Inflammatory, anti-platelet and anti-arthritic activities in the leaves of Anisomelesmalabarica Linn. Research Journal of Pharmaceutical, Biological and Chemical Sciences 2010; 4: 745 – 752.

[14]. Ayyanar M and Ignacimuthu S: Herbal medicines for wound healing among tribal people in southern India: Ethnobotanical and Scientific evidences. International Journal of Applied Research in Natural Products 2009; 3: 29-42.

[15]. Shanmugam S, Gayathri SN, Sakthivel B, Ramar S and Rajendran K: Plants used as Medicine by Paliyar Tribes of Shenbagathope in Virudhunagar District of Tamilnadu, India. Ethnobotanical Leaflets 2009; 13: 370-78.

[16]. Mathur A and Joshi H: Ethnobotanical Studies of the Tarai Region of Kumaun, Uttarakhand, India. Journal of Plants, People and Applied Research 2013; 11: 175 – 203.

[17]. Sundaresan S and Senthilkumar B: A survey of traditional medicinal plants from the Vellore District, Tamil Nadu, India. International Journal of Ayurvedic and Herbal Medicine 2013; 5: 1347–1355.

[18]. Subitha KT, Ayyanar M, Udayakumar M and Sekar T: Ethnomedicinal plants used by Kanitribals in Pechiparai forests of Southern western Ghats, Tamil Nadu, India: International Research Journal of Plant Science 2011; 12: 349-354.

[19]. Mohan VR, Abragam AD, Kalidass C and Maruthupandian A: Pharmacognostical and phytochemical investigation of whole plant of Blepharismaderaspatensis (L.) Heyne ex Roth. Journal of Pharmacognosy 2010; 14: 1-6.

[20]. Sandhya S, Vinod, KR. and Kumar S: Herbs used for brain disorder. Journal for drugs and medicine 2010; 1: 38-45.

[21]. Pattar PV, Jayaraj M, Arunkumar BS and Ananth B: Pharmacognostical and Preliminary Phytochemical Investigation of Blepharismolluginifolia, Pers. – A Threatened Medicinal Herb. Journal of Pharmacognosy 2011; 10: 5530-5536

[22]. AmeenahGurib-Fakim, Medicinal plants: Traditions of yesterday and drugs of tomorrow, Molecular Aspects of Medicine, 2006; 27: 1–93

[23]. Kettner, C., Kosch, H., Lang, M., Lachner, J., Oborny, D., Teppan, E., 2005. Creating a Medicinal Plant Database, Workshop on Database Issues in Biological Databases (DBiBD), Edinburgh.

[24]. Akerele, O, Summary of WHO guidelines for the assessment of herbalmedicine. Herbalgram,1993;28:13–19.

[25]. Newman, D.J., Cragg, G.M., Snader, K.M. The influence of natural products upon drug discovery. Natural Product Reports. 2000; 17(3): 215–234.

[26]. Newman, D.J., Cragg, G.M., Snader, K.M., Natural products as sources of new drugs over the period 1981–2002. Journal of Natural Products, 2003; 66(7): 1022–1037.

[27]. Ayyanar M, Sankarasivaraman K, Ignacimuthu S Traditional Healing Potential of Paliyars in Southern India. Ethno Leaflets, 2008; 12: 311-317.

[28]. Ignacimuthu S, Ayyanar M Sankara Sivaraman K Ethno botanical investigations among tribes in Madurai District of Tamil Nadu (India). J Ethnobiol Ethnomed, 2006; 2: 25-27.

[29]. FROeHLICH J, Petrini O. Endophytic fungi associated with palms. Mycological Research. 2000 Oct;104(10):1202-12.