

- امید بیگی، ر. ۱۳۸۴. تولید و فراوری گیاهان دارویی. انتشارات آستان قدس رضوی.
- حسنلو، ط. رضازاده، ش. رهنما، ح. ۱۳۸۷. ریشه‌های موین منبعی برای تولید ترکیبات با ارزش دارویی. فصل‌نامه گیاهان دارویی. دوره اول، شماره بیست و نهم، صفحات ۱۳-۱.
- سالاری ثانی، ا. ۱۳۹۰. بررسی تولید ریشه‌های موین در گیاه دارویی پروانش (*Catharanthus roseus*) به منظور افزایش تولید متابولیت‌های ثانویه با ارزش دارویی. پایان‌نامه کارشناسی ارشد بیوتکنولوژی، دانشگاه فردوسی مشهد.
- سجادی، ا. و رپورت، ر. ۱۳۷۷. مقایسه چهل‌وسه کولتیوار گیاه پروانش از نظر مقدار آلکالوئید ضد سرطان وینبلاستین. مجله پژوهش در علوم پزشکی. سال پنجم، پیوست دوم، صفحات ۲۳-۲۰.
- قسامی، ن. ۱۳۸۰. جداسازی، شناسایی و استخراج ترکیبات ضد سرطان وینبلاستین و وین کریستین از گیاه پروانش رشد یافته در ایران. پایان‌نامه کارشناسی ارشد شیمی تجزیه، دانشگاه صنعتی اصفهان.
- مشتاقی، ن. ۱۳۸۲. تولید ریشه موین با استفاده از *Agrobacterium rhizogenes* در گیاه *Datura stramonium* و مقایسه میزان و ثبات رشد با ریشه‌های نرمال. پایان‌نامه کارشناسی ارشد بیوتکنولوژی، دانشگاه فردوسی مشهد.
- Aijaz, A. Jain, S. and Hariharan A.G. 2011. Effect of elicitation on the production of phyto-constituents through plant tissue culture technique. *Int. J. of Drug Discovery & Herbal Research*. 1 (2): 84-90.
- Aslam J., Haque Khan S., Siddiqui Z.H., Fatima Z., Maqsood M., Bhat M.H., Nasim S.A., Ilah A. , Ahmad E.Z., Khan S.A., Mujib A. and Sharma M. P. 2010. *Catharanthus roseus* (L.) G. Don: An important drug: Its applications and production. *Pharmacie Globale (IJCP)*, 4 (12):1-16

- Balandrin, M.F., Klocker, J.A., Wurtele, E.S. and W.H. Bollinger. 1985. Natural plant chemicals: sources of industrial and medicinal materials. *Science* 228:1154-1160.
- Batra J., Dutta A., Singh D., Kumar S. and Sen. J. (2004) Growth and terpenoid indole alkaloid production in *Catharanthus roseus* hairy root clones in relation to left- and right-termini-linked Ri T-DNA gene integration. *Plant Cell Rep.* 23:148-154
- Bennett, J.W. and R. Bentley. 1989. What's in a name? Microbial secondary metabolism. *Adv. Appl. Microbiol.* 34:1-28.
- M.K. and Fliniaux M.A. 2008. Induction and growth of hairy roots for the production of medicinal compounds. *Integrative Biosciences.* 3(1):2-9
- Bhadra, R, Vani, S and Shanks, J.V. 1993. Production of indole alkaloids by selected hairy root lines of *Catharanthus roseus*. *Biotech. Bioengin.* 41: 581-592.
- Bourgaud, F., Gravot, A., Milesi, S. and E. Gontier. 2001. Production of plant secondary metabolites: a historical perspective. *Plant Sci.* 161:839-851.
- Briellmann, H.L. 1999. Phytochemicals: The Chemical Components of Plants. "In *Natural Products of Plants*" . Kaufman, P.B., Cseke, L.J., Warber, S., Duke, J.A., Briellmann, H.L. eds. CRS press, Floria, USA. pp 1250-1318.
- Canel, C., Lopez-Cardoso, M. I., Whitmer, S., Fits, L., Pasquali, G., Heijden, R., van der Hoge, J.H.C. and Verpoorte. 1998. *Planta.* 205: 414-419.
- Carderlli, M., Mariotti, D., Pomponi, M., Spano, L., Capone, I. and P. Castantino. 1987. *Agrobacterium rhizogenes* T-DNA genes capable of inducing hairy root phenotype. *Mol. Genet.* 209:475-480.
- Carolyn, W.T., Parsons, L., Ertürk, S. and Tengtrakool. J. 2004. Enhancement of ajmalicine production in *Catharanthus roseus* cell cultures with methyl jasmonate is dependent on timing and dosage of elicitation. *Biotechnology Letters* 0: 1595-1599
- Chawla, H. 2000. Introduction to Plant Biotachnology. Science publisher. *Enfield.USA.* 363pp.
- Cheng, S.S., Park, S.K., Kim, B.C., Kang, B.J., Kim, D.U., and , Nam, H.G. 1994. Stable genetic transformation of *Arabidopsis thaliana* by *Agrobacterium* inoculation in plant. *Plant Sic.* 5:551-558.
- Chilton, M.D., Drummond, M.H., Merlo, D.J., Sciaky, D. Montoya, A.L., Gordon, M.P. and E.W., Nester. 1977. Stable incorporation of plasmid DNA into higher plant cells: the molecular basis of crown gall tumorigenesis. *Cell.* 11:263-271.

- Chilton. M.D., Saiki R.K., Yadav N., Gordon M.P. and F. Quetier. 1980. T-DNA from *Agrobacterium* Ti plasmid is in the nuclear DNA of crown gall tumour cells. *Proc. Natl. Acad. Sci. USA* 77:4060–4064.
- Choi P.S., Kim Y.D., Choi K.M., Chung H.J, Choi D.W. and Liu J.R. 2004. Plant regeneration from hairy-root cultures transformed by infection with *Agrobacterium rhizogenes* in *Catharanthus roseus*. *Plant Cell Rep* .22:828–831
- Choi, Y.H., Yoo, K.P. and Kim, J. 2002. Supercritical fluid extraction and liquid chromatography–electrospray mass analysis of vinblastine from *Catharanthus roseus*. *Chem. Pharm. Bulletin* 50:1294–1296.
- Christey , M.C. 2001. Use of ri mediated transformation for production of transgenic plants. *In Vitro Cell.Dev.Biol.Plant*. 37: 687-700
- Chu, I.H., Bodnar, J.A., Bowman, R.N., and E.L. White. 1997. Determination of vincristine and vinblastine in *Catharanthus roseus* plants by high performance liquid chromatography electrospray ionization mass spectrometry. *J. Chromatogr. Relat. Technol.* 20:1159–1174.
- Danial, M. Keng, C.L., Alwee, S. and Subramaniam, S. 2012. Hairy roots induction from difficult-to-transform pharmacologically important plant *Eurycoma longifolia* using wild strains of *Agrobacterium rhizogenes*. *Journal of Medicinal Plants Research*. 6(3): 479-487.
- Das, S., Sopory, S.K., Srivastava, P.S.and T. Srivastava. 2009. A reliable protocol for transformation of *Catharanthus roseus* through *Agrobacterium tumefaciens*. *Physiol. Mol. Biol. Plants*. 15:93-98.
- De La Riva, G.A., Gozales-Cabrera, J., Vazquez-Pardon, R., and Ayra-Pardo, C. 1998. The *Agrobacterium thumefaciens* gene transfer to plant cell. *Electronic Journal of Biotechnology*. 118:133.
- De Luca, V., Balsevich, J., Tyler, R.T., Eilert, U., Panchuk, B.D. and Kurz, W.G.W.1986. Biosynthesis of indole alkaloids: developmental regulation of the biosynthetic pathway from tabersonine to vindoline in *Catharanthus roseus*. *J. Plant. Physiol.* 125:147–156.
- Dellapenna, D. 2001. Plant metabolic engineering . *Plant Physiol*. 125:160-163.
- Dobelis, Inge N. 1989. Magic and Medicine of Plants. Pleasantville, NY, Reader's Digest Books.
- Dollery, C. 1999. Therapeutic Drugs. Churchill Livingstone Co, London. Vol 2 (34).

- Doran, PM. 2009. Application of plant tissue cultures in phytoremediation research: incentives and limitations. *Biotechnol. Bioeng.*, 103: 60-76.
- Drager, B. 2002. Analysis of tropane and related alkaloids. *J. Chromatogr. A.* 978:1-35
- El-Sayed, M., and Verpoorte, R. 2002. Effects of phytohormones on growth and alkaloid accumulation by *Catharanthus roseus* cell suspension cultures fed with alkaloid precursors tryptamine and loganin. *Plant Cell Tissue and Organ Culture.* 68: 265-270.
- Fachini, P.J. 1999. Plant secondary metabolism: out of the evolutionary abyss. *Trends plant Sci.* 4:382-384.
- Gaines, J. 2004. Increasing alkaloid production from *Catharanthus roseus* suspension through methyl jasmonate elicitation. *The Official Journal of ISPE.* 24: 1-6
- Gelvin, S. B. 2000. *Agrobacterium* and plant genes involved in T-DNA transfer and integration. *Annual Review of Plant Physiology and Plant Molecular Biology.* 51: 223-256.
- Georgiev, M.I., Pavlov, A. and T. Bley. 2007. Hairy root type plant in vitro system as source of bioactive substances. *Appl Microbial biotechnol.* 74:1175-1185.
- Giri, A. and Narasu, M.L. 2000 . Transgenic hairy roots: recent trends and applications. *Biotechnology Advances* 18: 1-22.
- Grzegorzcyka, I., Iickab, A.K. and Wysokin' ska, H. 2006. Establishment of *Salvia officinalis* L. Hairy root cultures for the production of rosmarinic acid. *Verlag der Zeitschrift für Naturforschung, Tübingen.* 61: 351-356.
- Guillon, S., Tremouillaux-Guiller, J., Pati, P.K., Rideau, M., and Gantet, P. 2006. Hairy root research: recent scenario and exciting prospects. *Curr. Opin. Plant. Biol.* 9:341-346.
- Hilton, M.G. and Rhodes M.J. 1990. Growth and hyoscyamine production of hairy root cultures of *Datura stramonium* in a modified stirred tank reactor. *Appl Microbiol Biotechnol.* 33:132-138.
- Hisiger, S. and Jolicoeur, M. 2007. Analysis of *Catharanthus roseus* alkaloids by HPLC. *Phytochem. Rev.* 6:207-234.
- Hu, Zh-B. and Du, M. 2006. Hairy root and its application in plant genetic engineering. *J Integr Plant Biol.* 48:121-127.
- Ishida, J.K., Yoshida, S., Ito, M., Namba, S., Shirasu, K. 2011. *Agrobacterium rhizogenes*-mediated transformation of the parasitic plant *Phtheirospermum japonicum*. *PLoS ONE.* 6(10): 1-8.

- John, M., Joshi, S. D., Mandal, A. K., Kumar, S. and Kumar, A. 2009. *Agrobacterium rhizogenes*-mediated hairy root production in tea leaves [*Camellia sinensis* (L.) O. Kuntze]. *Indian Journal of Biotechnology*. 8: 430-434
- Junaid, A., Nasim, S. A., Mujib, A., and Sharma, M. P. 2009. Screening of vincristine yield in *ex vitro* and *in vitro* somatic embryo derived plantlets of *Catharanthus roseus* L. *Scientia Horticulturae*. 119: 325-329.
- Kanokwan, K and P.M. Doran. 1997. Effect of inoculum size on growth of *Atropa belladonna* hairy roots in shake flasks. *Journal of Fermen. And Bioen.* 84: 378-381.
- Katare, D. P., Aeri, V., and Bora, M. 2009. Secondary metabolites and metabolic engineering. *Journal of Cell and Tissue Research*. 9: 2027-2036.
- Khan, M .T. H; Ather, A; Gambari, R . (2005). The Role of metabolic engineering for the Production of Secondary Metabolites of Plants *Journal of Cell and Tissue Research* . 9: 2027-2036.
- Kim, Y. Wyslouzil, B.E. and P.J Wheathers. 2002. Secondary metabolism of hairy root cultures in bioreactors. *In Vitro Cell Dev. Biol. Plant*. 38:1-10
- Kumar, J. and. Gupta, P.K. 2008. Molecular approaches for improvement of medicinal and aromatic plants. *Plant Biotechnol Rep*. 2: 93 – 112
- Lea, P.J. and Leegoog, R.C. 1999. Plant Biochemistry and Molecular Biology. *John Wiley and Sons*, London, 358pp.
- Limami, MA., Sun, LY., Douat, C., Helgeson, J., Tepfer, D. 1998. Natural genetic transformation by *Agrobacterium rhizogenes*. *Plant Physiol* 118:543–550
- Machado, I.E. , Escobedo, G.M. and Saavedra, A.L. 2007. Responses of transformed *Catharanthus roseus* roots to femtomolar concentrations of salicylic acid. *Plant Physiology and Biochemistry*. 45:501-507.
- McCalley, D.V. 2002. Analysis of the Cinchona alkaloids by high-performance liquid chromatography and other separation techniques. . 967:1–19.
- Mei, WY, Wang, J.B., Luo, D. and Jia. J.F. (2001). Regeneration of plants from callus cultures of roots induced by *Agrobacterium rhizogenes* on *Alhagi pseudoalhagi*. *Cell Res*. 11: 279-284.
- Memelink, J., Verpoorte, R., Kijne, J.W., 2001. ORCANization of jasmonate responsive gene expression in alkaloid metabolism. *Trends Plant Sci*. 6, 212–219.
- Milen, I., Atanas, I., Pavlov, B. 2007. Hairy root type plant in vitro systems as sources of bioactive substances. *Appl Microbiol Biotechnol*. 74: 1175 – 85.

- Mishra, N., Pal, S. and Dey, S. 2006. Production and characterization of Arabinogalactan protein (AGP) from a hairy line of *Catharanthus roseus* (L.) G. Don. *Indian Journal of Biotechnology*. 5: 211-216
- Morgan, J. A., Barney C. S., Penn A. H., Shanks J. V. (2000). Effects of buffered media upon growth and alkaloid production of *Catharanthus roseus* hairy roots. *Appl Microbiol Biotechnol* 53: 262-265
- Namdeo, A. G. 2007. Plant cell elicitation for production of secondary metabolites. *Pharmacognosy Reviews*. 1:69-79
- Nilsson, O, Tuominen, H., Sundberg, B., Olsson, O. (1997). The *Agrobacterium rhizogenes* *rolB* and *rolC* promoters are expressed in pericycle cells competent to serve as root initials in transgenic hybrid aspen. *Physiologica Plantarum*, 100(3): 456-462.
- Palazon, J., Altabella, T., Cusido, R.M., Ribo, M. and Pinol, M.T. 1995. Growth and tropane alkaloid production in *Agrobacterium* transformed root and derived callus of *Datura*. *Biologia Plantarum*. 37:161-168.
- Park, S-U. and Fashini, P.J. 2000. High efficiency somatic embryogenesis and plant regeneration in *California poppy*, *Eschscholzia californica* cham. *Plant Cell Reports*. 19:421-426.
- Payne, J., Hamill, J.D., Robins, R.J., Rhodes, M.J.C. 1987. Production of hyoscyamine by hairy root cultures of *Datura stramonium*. *Planta. Med.* 53:474-478.
- Petersen, M. 2007. Current status of metabolic phytochemistry. *Phytochemistry*. 68: 2847 – 2860.
- Pietrosiuk, A. and Furmanowa, M. 2001. Preliminary results of indole alkaloids production in different roots of *Catharanthus roseus* cultured in vitro. *Acta. Soc. Bot. Pol.* 70:261-265.
- Pietrosiuk, A., Furmanowa, M. and Łata, B. 2007. *Catharanthus roseus*: micropropagation and in vitro techniques. *Phytochem Rev.* 6:459-473.
- Premjet, D., Itoh, K., Tachibana, S. 2002. Stimulation of the production of podophyllotoxin by biogenetic precursors and elicitor in *Juniperus chinensis* stem derived callus cultures, *Pakistan Journal of Biological Science*. 5: 131-316.
- Premjet, D., Itoh, K. and Tachibana, S. 2002. Enhancement of Podophyllotoxin Production by biogenetic precursors and elicitors in cell suspension cultures of *Juniperus Chinensis*. *Pakistan Journal of Biological Sciences*. 5: 1267-1271.

- Rahimi, K., Haghbeen, K., Marefatjo, J., Rastgar, F. and Sheikhan, R. 2008. Successful production of hairy root of *Valeriana sisymbriifolium* by *Agrobacterium rhizogenes*. *Biotechnology*. 7(2): 200-204.
- Ramachandra-Rao, S. and Ravishankar, G.A. 2002. Plant cell cultures: chemical factories of secondary metabolites. *Biotechnol. Adv.* 20: 101-153.
- Ramavat, K.G and Merillon. J.M. 1999. *Biotechnology: Secondary Metabolites*. Science Publishers, Enfield, USA, 372 pp.
- Robinson, T. 1981. Tropane alkaloids. In *The Biochemistry of Alkaloids*, 2nd edn, Robinson T (ed.). Springer: Berlin; 58-66.
- Saleh, N. M. and Thuc, L. V. 2009. Assessment of hairy roots induction in *Solenostemon scutellarioides* leaves by different strains of *Agrobacterium rhizogenes*. *African Journal of Biotechnology*. 8(15): 3519-3523.
- Senoussi, M., Bassa N., Creche, J., Ridea, M. and Chénieux, J.C. 2004. Effects of hypoxia, loganin and BAP on ajmalicine accumulation in cells of *Catharanthus roseus* (*Vinca rosea*) *In vitro*. *Basic Science*. 20: 9-17
- Senoussi, M. M., Creche, J., and Rideau, M. 2007. Relation between hypoxia and alkaloid accumulation in *Catharanthus roseus* cell suspension. *Journal of Applied Sciences Research*. 3: 287-290.
- Sevon, N., and Oksman-Caldentey, K.M. 2002. *Agrobacterium rhizogenes* mediated transformation: root cultures as a source of alkaloids. *Planta Med.* 68:859-868
- Shanks, J.V and Morgan, J. 1999. Plant 'hairy root' culture. *Current Opinion in Biotechnology*, 10:151-155
- Shanks, J.V., Morgan, J. 1999. Plant "hairy root" culture. *Curr. Opin. Biotechnol.* 10:151-155.
- Shi, HP, Kintzios, S. 2003. Genetic transformation of *Pueraria phaseoloides* with *Agrobacterium rhizogenes* and puerarin production in hairy roots. *Plant Cell Rep.* 21:1103-1107.
- Stachel, S. E., Messens, E., van Montagu, M., and Zambryski, P. 1985. Identification of signal molecules produced by wounded plant cells that activate T-DNA transfer in *Agrobacterium*. *Nature*. 318: 624-629.
- Stockigt, J., Sheludko, Y., Unger, M., Gerasimenko, I., Warzecha, H. and Stockigt, D. 2002. High-performance liquid chromatographic, capillary electrophoretic and

- capillary electrophoretic–electrospray ionisation mass spectrometric analysis of selected alkaloid groups. *J. Chromatogr. A*. 967:85–113.
- Szabo, E., Thelen, A., Peterson. 1999. Fungal elicitor preparation and methyl jasmonate enhance rosmarinic acid accumulation in suspension culture of *Coleus blumei*. *Plant Cell Report*. 18:484-489.
- Tripathi, L., Tripathi, J.N. 2003. Role of biotechnology in medicinal plants. *Tropical J. of Pharmaceutical Res.* 2: 243 - 53.
- Tzfira T. and Citovsky V. 2008. *Agrobacterium: From Biology to Biotechnology*. Springer. Pp 750
- Valenzuela O.A., Garcia Y.M., Chan W., Geraldo E.M., Carbajal E. and Vargas V.M. 2003. Increase in the indole alkaloid production and its excretion into the culture medium by calcium antagonists in *Catharanthus roseus* hairy roots. *Biotechnology Letters* 25: 1345–1349
- Vazquez-Flota,, F., Moreno-Valenzuela, O., Miranda-Ham, M.L., Coello-Coello, J. and Loyola-Vargas, V.M. 1994. Catharanthine and ajmalicine synthesis in *Catharanthus roseus* hairy root cultures, Medium optimization and elicitation. *Plant Cell, Tissue and Organ Culture* 38: 273-27
- Veena, V. and C.G. Taylor. 2007. *Agrobacterium rhizogenes*: recent development and promising application. *In Vitro Cell.Dev. Biol. Plant*. 43:383-403.
- Verpoorte R, Memelink J. 2002. Engineering secondary metabolite production in plants. *Curr opin. Biotechnol.* 13: 181 -187.
- Verpoorte R., Continl A. and Memelink J. 2002 . Biotechnology for the production of plant secondary metabolites. *Phytochemistry Reviews* 1: 13–25
- Verpoorte, R. 1999. Secondary metabolism. In: Verpoorte, R., and Alfermann, A.W. (eds.). *Metabolic engineering of plant secondary metabolism*. Kluwer Academic Publishers, the Netherlands. pp 1-29.
- Verporte, R. and Zhao, J. 2007. Manipulating indole alkaloid productionby *Catharanthus roseus* cell cultures in bioreactors: from biochemical processing to metabolic engineering. *Springer Science, Business Media B.V.* 6:435-457.
- Walker, T.S., Pal Bais, H. and Vivanco, J.M. 2002. Jasmonic acid induced hypericin production in cell suspension culture of *Hypericum perforatum* L. *Phytochemistry*. 60:289-293.

- Wang, J.W. and Tan R.X. 2002. Artemisin production in *Artemisia annua* hairy root cultures with improved growth by altering the nitrogen source of the medium. *Biotechnol. Lett.* 24: 1153-1156.
- Yang, J. Gong, Z. C. and Tan, X. 2008. Induction of callus and extraction of alkaloid from Yi Mu Cao (*Leonurus heterophyllus* Sw). culture, *African Journal of Biotechnology*. 7: 1157-1162
- Zarate, R. and Verpoorte, R. 2007. Strategies for the genetic modification of the medicinal plant *Catharanthus roseus* (L.) G. Don. *Phytochem Rev* 6: 475-491
- Zhao, J., Zhu, W. and Q. Hu. 2001. Enhanced catharanthine production in *Catharanthus roseus* cell cultures by combined elicitor treatment in shake flasks and bioreactors. *Enz. Microb. Technol.* 28, 673-681.
- Zhou, H., Tai, Y.P., Sun, C.R. and Y.J. Pan. 2005. Rapid identification of Vinca alkaloids by direct injection electrospray ionisation tandem mass spectrometry and confirmation by high performance liquid chromatography mass spectrometry. *Phytochem. Anal.* 16:328-333.
- Zolala, J., Farsi, M., Gordan, H.R. and Mahmoodnia, M. 2007. Production a high scopolamine hairy root clone in *Hyoscyamus muticus* through transformation by *Agrobacterium rhizogenes*. *J. Agric. Sci. Technol.* 9:327-339.