REFERENCES

1. Tobin DJ, Paus R. Graying: gerontobiology of the hair follicle pigmentary unit. Exp Gerontol. 2001; 36: 29-54.
2. Van Neste D, Tobin DJ. Hair cycle and hair pigmentation: dynamic interactions and changes associated with aging. Micron. 2004; 35: 193-200.
3. Dawber R, Van Neste D. Hair and scalp disorders: common presenting signs, differential diagnosis and treatment. 2nd ed. Florida: Taylor & Francis; 2004.
4. Nohynek G. Toxicology of hair dyes. In: Bouillon C, Wilkinson J, eds. The science of hair care. 2nd ed. Florida: CRC Press; 2005. p. 313-344.
5. Shono S, Toda K. The effect of fatty acids on tyrosinase activity. In: Seiji M, editor. Phenotypic Expression in Pigment Cells; 1981; Sendai, Japan: University of Tokyo Press; 1981. p. 263-268.
6. Ando H, Funasaka Y, Oka M, Ohashi A, Furumura M, Matsunaga J, et al. Possible involvement of proteolytic degration of tyrosinase in the regulatory effect of fatty acids on melanogenesis. J Lipid Res. 1999; 40: 1312-1316.
7. Jeon S, Kim N-H, Koo B-S, Kim J-Y, Lee A-Y. Lotus (Nelumbo nuficera) flower essential oil increased melanogenesis in normal human melanocytes. Exp Mol Med. 2009; 41: 517-524.
8. Roberts MS, Cross SE, Pellete MA. Skin transport. In: Walters KA, ed. Dermatological and transdermal formulations. USA: Marcel Dekker; 2002. p. 89-195.

9. Meidan VM, Bonner MC, Michniak BB. Transfollicular drug delivery-is it a reality? Int J Pharm. 2005; 306: 1-14.

10. Knorr F, Lademann J, Patzelt A, Sterry W, Blume-Peytavi U, Vogt A. Follicular transport route – research progress and future perspectives. Eur J Pharm Biopharm. 2009; 71: 173-180.

11. Schaefer H, Watts F, Brod J, Illel B. Follicular penetration. In: Scott RC, Guy RH, Hadgrafy J, eds. Prediction of percutaneous penetration: methods, measurement, and modeling. London: IBC Technical Services; 1990: p. 405-441.

12. Rolland A, Wagner N, Chatelus A, Shroot B, Schaefer H. Site-specific drug delivery to pilosebaceous structures using polymeric microspheres. Pharm Res. 1993; 10: 1738-1744.

13. Mordon S, Sumian C, Devoiselle J. Site-specific methylene blue delivery to pilosebaceous structures using highly porous nylon microspheres: an experimental evaluation. Lasers Surg Med. 2003; 33: 119-125.

14. Alvarez-Roman R, Naik A, Kalia Y, Guy R, Fessi H. Skin penetration and distribution of polymeric nanoparticles. J Control Release. 2004; 99:53-62.

15. Ciotti S, Weiner N. Follicular liposomal delivery systems. J Liposome Res. 2002; 12: 143-148.

16. Mitsui T. New Cosmetic Science. The Netherlands: Elsevier Science B.V.; 1997.

17. Toll R, Jacobi U, Richter H, Lademann J, Schaefer H, Blume-Peytavi U. Penetration profile of microspheres in follicular targeting of terminal hair follicles. J Invest Dermatol. 2003; 123: 168-176.

18. Bernard BA. The hair follicle: structure and function. In: Bouillon C, Wilkinson J, eds. The science of hair care. 2nd ed. Florida: CRC Press; 2005. p. 67-78.

19. Slominski A, Wortsman J, Plonka PM, Schallreuter KU, Paus R, Tobin DJ. Hair Follicle Pigmentation. J Invest Dermatol. 2005; 124: 13-21.

20. Bernard BA, Commo S. The hair pigmentation unit and hair graying. In: Bouillon C, Wilkinson J, eds. The science of hair care. 2nd ed. Florida: CRC Press; 2005. p. 549-558.

21. Oetting WS. Anatomy of pigment cell genes acting at the subcellular level. In: Nordlund JJ, Boissy RE, Hearing VJ, King RA, Ortonne JP, eds. The pigmentary system, physiology and pathology. New York: Oxford University Press; 1998. p. 231-249.

22. Commo S, Gaillard O, Bernard B. Human hair greying is linked to a specific depletion of hair follicle melanocytes affecting both the bulb and the outer root sheath. Br J Dermatol. 2004; 150: 435-443.

23. Horikawa T, Norris DA, Johnson TW, Zekman T, Dunscomb N, Bennion SD, et al. Dopa-negative melanocytes in the outer root sheath of human hair follicles express premelanosomal antigens but not a melanosomal antigen or the melanosome-associated glycoproteins tyrosinase, TRP-1, and TRP-2. J Invest Dermatol. 1996; 106: 28-35.

24. Ideta R, Soma T, Tsunenaga M, Ifuku O. Cultured human dermal papilla cells secret a chemotactic factor for melanocytes. J Dermatol Sci. 2002; 28: 48-59.

25. Keogh EV, Walsh RJ. Rate of graying of human hair. Nature. 1965; 207:877-878.

26. Lloyd T, Garry F, Manders E, Marks J. The effect of age and hair color on human hair bulb tyrosinase activity. Br J Dernatol. 1987; 116: 485-489.

27. Magnani D, Brandner J, Mullner S, Kief S, Moll I. Are melanocytes present in senile white hair? Arch Dermatol Res. 2001; 293: 215a.

28. Sarin K, Artandi S. Aging, graying and loss of melanocyte stem cells. Stem Cell Rev. 2007; 3: 212-217.

29. Takada K, Sugiyama K, Yamamoto I, Oba K, Takeuchi T. Presence of amelanotic melanocytes within the outer root sheath in senile white hair. J Invest Dermatol. 1992; 99: 629-633.

30. Shetty M. Radiation therapy activates melanocytes in hair. Br Med J. 1995; 311: 1582.

31. Steingrimsson E, Copeland N, Jenkins N. Melanocyte stem cell maintenance and hair graying. Cell. 2005; 121: 9-12.

32. Pasricha SJ. Successful treatment of grey hairs with high dose calcium pantothenate. Indian J Dermatol Venereol Leprol. 1981; 47: 311-313.

33. Singer L, Davis GK. Pantothenic acid in copper deficiency in rats. Science. 1950; 111: 472-474.

34. Zarafonetis C. Darkening of gray hair during p-aminobenzoic acid therapy. J Invest Dermatol. 1950; 15: 399-491.

35. Trüeb RM. Aging of hair. J Cos Dermatol. 2005; 4: 60-72.

36. Matsuda H, Hirata N, Kawaguchi Y, Yamazaki M, Naruto S, Shibano M, et al. Melanogenesis stimulation in murine B16 melanoma cells by Umbelliferae plant extracts and their coumarin constituents. Biol Pharm Bull. 2005; 28: 1229-1233.

37. Matsuda H, Kawaguchi Y, Yamazaki M, Hirata N, Naruto S, Asanuma Y, et al. Melanogenesis stimulation in murine B16 melanoma cells by *Piper nigrum* leaf extract and its lignan constituents. Biol Pharm Bull. 2004; 27: 1611-1616.

38. Pal P, Mallick S, Manders EK, Das M, Dutta AK, Datta PK, et al. A human placental extract: *in vivo* and *in vitro* assessments of its melanocyte growth and pigment-inducing activities. Int J Dermatol. 2002; 41: 760-767.

39. Mallick S, Mandal S, Bhadra R. Human placental lipid induces mitogenesis and melanogenesis in B16F10 melanoma cells. J Bioscience. 2002; 27: 243-249.

40. Soumyanath A, Venkatasamy R, Joshi M, Faas L, Adejuyigbe B, Drake AF, et al. UV irradiation affects melanocyte stimulatory activity and protein binding of piperine. Photochem Photobiol. 2006; 82: 1541-1548.

41. Hirata N, Naruto S, Ohguchi K, Akao Y, Nozawa Y, Iinima M, et al. Mechanism of the melanogenesis stimulation activity of (-)-cubebin in murine B16 melanoma cells. Bioorg Med Chem. 2007; 15: 4897-4902.

42. Ando H, Itoh A, Mishima Y, Ichihashi M. Correlation between the number of melanosomes, tyrosinase mRNA levels, and tyrosinase activity in cultured murine melanoma cells in response to various melanogenesis regulatory agents. J Cell Physiol. 1995; 163: 608-614.

43. Ando H, Ryu A, Hashimoto A, Oka M, Ichihashi M. Linoleic acid and a-linolenic acid lightens ultraviolet-indced hyperpigmentation of the skin. Arch Dermatol Res. 1998; 290: 375-381.

44. Ando H, Watabe H, Valencia JC, Yasumoto K, Furumura M, Funasaka Y, et al. Fatty acids regulate pigmentation via proteasomal degradation of tyrosinase: a new aspect of ubiquitin-proteasome function. J Biol Chem. 2004; 279: 15427-15433.

45. Ando H, Wen ZM, Kim HY, Valencia JC, Costin GE, Watabe H, et al. Intracellular composition of fatty acid affects the processing and function of tyrosinase through the ubiquitin–proteasome pathway. Biochem J. 2006; 394: 43-50.

46. Lotan R, Lotan D. Stimulation of melanogenesis in a human melanoma cell line by retinoids. Cancer Res. 1980; 40: 3345-3350.

47. Chow CK. Fatty acids in foods and their health implications. 3rd ed. New York: CRC Press; 2008.

48. Akoh CC, Min DB. Food lipids: chemistry, nutrition, and biotechnology. 3rd ed. New York: CRC Press; 2008.

49. Hilditch TP, Williams PM. The chemical constitution of natural fats. 4th ed. London: Chapman & Hall; 1964.

50. Lanzendorfer G. Lipidic ingredients in skin care formulations. In: Forster T, ed. Cosmetic lipids and the skin barrier. New York: Marcel Dekker, Inc.; 2002. p. 255-297.

51. Zanarini MC, Frankenburg FR. Omega-3 fatty acid treatment of women with borderline personality disorder: a double-blind, placebo-controlled pilot study. Am J Psychiatry. 2003; 160: 167-169.

52. Rowe RC, Sheskey PJ, Owen SC. Handbook of pharmaceutical excipients. 5th ed. Great Britain: Pharmaceutical Press; 2008.

53. Aungst BJ, J. Rogers N, Shefter E. Enhancement of naloxone penetration through human skin *in vitro* using fatty acids, fatty alcohols, surfactants, sulfoxides and amides. Int J Pharm. 1986; 33: 225-234.

54. Shelton DL, inventor. The Procter&Gamble Company, Cincinnati, OH, USA, assignee. Anhydrous antiperspirant creams. US Patent; 1976.

55. McMurry J. Organic chemistry with biological applications. 2nd ed. Canada: Brooks/Cole, Cengage Learning; 2011.

56. Wade LG. Organic chemistry. 6th ed. New Jersey: Pearson Prentice Hall; 2006.

57. Guillemain J, Rousseau A, Delaveau P. Neurodepressive effects of the essential oil of Lavandula angustifolia Mill. Ann Pharm Fr. 1989; 47: 337-343.

58. Dorman HJD, Deans SG. Antimicrobial agents from plants: antibacterial activity of plant volatile oils. J Appl Microbiol. 2000; 88: 3008-3316.

59. Bonina FP, Montenegro L, De Capraris P, Bousquet E, Tirendi S. 1-Alkylazacycloalkan-2-one esters as prodrugs of indomethacin for improved delivery through human skin. Int J Pharm. 1991; 77: 21-29.

60. Gianello R, Libinaki R, Azzi A, Gavin PD, Negis Y, Zingg JM, et al. α-Tocopheryl phosphate: a novel, natural form of vitamin E. Free Radical Bio Med. 2005; 39: 970-976.

61. Gorcea M, Laura D. Evaluating the physicochemical properties of emollient esters for cosmetic use. Cosmet Toiletries. 2010; 125: 26-33.

62. Degn P, Zimmermann W. Optimization of carbohydrate fatty acid ester synthesis in organic media by a lipase from *Candida antarctica*. Biotechnol Bioeng. 2001; 74: 483-491.

63. Huh S, Kim YS, Jung E, Lim J, Jung KS, Kim MO, et al. Melanogenesis inhibitory effect of fatty acid alkyl esters isolated from *Oxalis triangularis*. Biol Pharm Bull. 2010; 33: 1242-1245.

64. Akihisa T, Tochizawa S, Takahashi N, Yamamoto A, Zhang J, Kikuchi T, et al. Melanogenesis-inhibitory saccharide fatty acid esters and other constituents of the fruits of *Morinda citrifolia* (Noni). Chem Biodivers. 2012; 9: 1172-1187.

65. Masuda M, Itoh K, Murata K, Naruto S, Uwaya A, Isami F, et al. Inhibitory effects of *Morinda citrifolia* extract and its constituents on melanogenesis in murine B16 melanoma cells. Biol Pharm Bull. 2012; 35: 78-83.

66. Thevenin MA, Grossiord JL, Poelman MC. Sucrose esters/cosurfactant microemulsion systems for transdermal delivery: assessment of bicontinuous structures. Int J Pharm. 1996; 137: 177-186.

67. Maroulis J, Kalfarentzos F. Complications of parenteral nutrition at the end of the century. Clin Nutri. 2000; 19: 295-304.

68. Bos JD, Meinardi MM. The 500 Dalton rule for the skin penetration of chemical compounds and drugs. Exp Dermatol. 2000; 9: 165-169.

69. Biesalski H. Effects of intra-tracheal application of vitamin A on concentrations of retinol derivatives in plasma, lungs and selected tissues of rats. Int J Vitam Nutr Res. 1996; 66: 106-112.

70. Uchegbu IF, Florence AT. Non-ionic surfactant vesicles (niosomes): physical and pharmaceutical chemistry. Adv Colloid Interface Sci. 1995; 58: 1-55.

71. Uchegbu IF, Vyas SP. Non-ionic surfactant based vesicles (niosomes) in drug delivery. Int J Pharm. 1998; 172: 33-70.

72. Andrade F, Videira M, Ferreira D, Sarmento B. Nanocarriers for pulmonary administration of peptides and therapeutic proteins. Nanomedicine. 2011; 6: 123-141.

73. Manosroi A, Wongtrakul P, Manosroi J, Sakai H, Sugawara F, Yuasa M, et al. Characterization of vesicles prepared with various non-ionic surfactants mixed with cholesterol. Colloids Surface B. 2003; 30: 129-138.

74. Cable C. An examination of the effects of surface modifications on the physicochemical and biological properties of non-ionic surfactant vesicles (Dissertation). Glasgow, University of Strathclyde; 1989.

75. Balakrishnan P, Shanmugam S, Lee WS, Lee WM, Kim JO, Oh DH, et al. Formulation and *in vitro* assessment of minoxidil niosomes for enhanced skin delivery. Int J Pharm. 2009; 377: 1-8.

76. Müller-Goymann CC. Physicochemical characterization of colloidal drug delivery systems such as reverse micelles, vesicles, liquid crystals and nanoparticles for topical administration. Eur J Pharm Biopharm. 2004; 58: 343-356.

77. Nobbmann U, Connah M, Fish B, Varley P, Gee C, Mulot S, et al. Dynamic light scattering as a relative tool for assessing the molecular integrity and stability of monoclonal antibodies. Biotechnol Genet Eng. 2007; 24: 117-128.

78. Fustier P, Taherian A, Ramaswamy H. Emulsion delivery systems for functional foods. In: Smith J, Charter E, eds. Functional food product development. Singapore: Blackwell Publishing Ltd.; 2010. p. 79-100.

79. Nutan M, Reddy I. General principles of suspensions. In: Kulshreshtha A, Singh O, Wall G, eds. Pharmaceutical suspensions. London: Springer; 2009. p. 39-66.

80. Gibson N, Shenderova O, Luo T, Moseenkov S, Bondar V, Puzyr A, et al. Colloidal stability of modified nanodiamond particles. Diam Relat Mater. 2009; 18: 620-626.

81. Hou D, Liu C, Ping Q, Liang X. The entrapped efficiency of BSA liposome. Yao Xue Xue Bao. 2007; 42: 545-549.

82. Yue P, Lu X, Zhang Z, Yuan H, Zhu W, Zheng Q, et al. The study on the entrapment efficiency and *in vitro* release of puerarin submicron emulsion. AAPS PharmSciTech. 2009; 10: 376-383.

83. Mujoriya R, Singh D, Bodla RB, Dhamande K. Niosome: a novel drug delivery system. Innovative Systems Design and Engineering. 2011; 2: 237-244.

84. Kazi KM, Mandal AS, Biswas N, Guha A, Chatterjee S, Behera M, et al. Niosome: a future of targeted drug delivery systems. J Adv Pharm Technol Res. 2010; 1: 374-380.

85. Maestrelli F, González-Rodríguez ML, Rabasco AM, Mura P. Effect of preparation technique on the properties of liposomes encapsulating ketoprofen–cyclodextrin complexes aimed for transdermal delivery. Int J Pharm. 2006; 312: 53-60.

86. Uhumwangho M, Okor R. Current trends in the production and biomedical applications of liposomes: a review. J Biomed Sci. 2005; 4: 9-21.

87. Maheshwari C, Pandey RS, Chaurasiya A, Kumar A, Selvam DT, Prasad GB, et al. Non-ionic surfactant vesicles mediated transcutaneous immunization against hepatitis B. Int Immunopharmacol. 2011; 11: 1516-1522.

88. Jain S, Singh P, Mishra V, Vyas SP. Mannosylated niosomes as adjuvant-carrier system for oral genetic immunization against hepatitis B. Immunol Lett. 2005; 101: 41-49.

89. Jain S, Vyas SP. Mannosylated niosomes as carrier adjuvant system for topical immunization. J Pharm Pharmacol. 2005; 57: 1177-1184.

90. Huang Y, Han G, Wang H, Liang WQ. Cationic niosomes as gene carriers: preparation and cellular uptake in vitro. Pharmazie. 2005; 60: 473-474.

91. Huang YZ, Rao Y, Chen JL, Yang V, Liang W. Polysorbate cationic synthetic vesicle for gene delivery. J Biomed Mater Res. 2011; 96: 513-519.

92. Manosroi A, Khositsuntiwong N, Götz F, Werner RG, Manosroi J. Transdermal enhancement through rat skin of luciferase plasmid DNA loaded in elastic nanovesicles. J Liposome Res. 2009; 19: 91-98.

93. Muller D, Foulon M, Bonnemain B, Vandamme TF. Niosomes as carriers of radiopaque contrast agents for X-ray imaging. J Microencapsul. 2000; 17: 227-243.

94. Bayindir ZS, Yuksel N. Characterization of niosomes prepared with various nonionic surfactants for paclitaxel oral delivery. J Pharm Sci. 2010; 99: 2049-2060.

95. Alvi IA, Madan J, Kaushik D, Sardana S, Pandey RS, Ali A. Comparative study of transfersomes, liposomes, and niosomes for topical delivery of 5-fluorouracil to skin cancer cells: preparation, characterization, *in-vitro* release, and cytotoxicity analysis. Anti-Cancer Drugs. 2011; 22: 774-782

96. Uchegbu IF, Double JA, Kelland LR, Turton JA, Florence AT. The activity of doxorubicin niosomes against an ovarian cancer cell line and three *in vivo* mouse tumour models. J Drug Target. 1996; 3: 399-409.

97. Uchegbu IF, Double JA, Turton JA, Florence AT. Distribution, metabolism and tumoricidal activity of doxorubicin administered in sorbitan monostearate (span60) niosomes in the mouse. Pharm Res. 1995; 12: 1019-1024.

98. Manosroi A, Jantrawut P, Manosroi J. Anti-inflammatory activity of gel containing novel elastic niosomes entrapped with diclofenac diethylammonium. Int J Pharm. 2008; 360: 156-163.

99. Reddy DN, Udupa N. Formulation and evaluation of oral and transdermal preparations of flurbiprofen and piroxicam incorporated with different carriers. Drug Dev Ind Pharm. 1993; 19: 843-852.

100. Pillai GK, Salim MLD. Enhanced inhibition of platelet aggregation *in-vitro* by niosome-encapsulated indomethacin. Int J Pharm. 1999; 193: 123-127.

101. Baillie AJ, Coombs GH, Dolan TF, Laurie J. Non-ionic surfactant vesicles, niosomes, as a delivery system for the anti-leishmanial drug, sodium stibogluconate. J Pharm Pharmacol. 1986; 38: 502-505.

102. Singh G, Dwivedi H, Saraf S, SA S. Niosomal delivery of isoniazid – development and characterization. Trop J Pharm Res. 2011; 10: 203-210.

103. Jain CP, Vyas SP. Preparation and characterization of niosomes containing rifampicin for lung targeting. J Microencapsul. 1995; 12: 401-407.

104. Jadon P, Gajbhiye V, Jadon R, Gajbhiye K, Ganesh N. Enhanced oral bioavailability of griseofulvin via niosomes. AAPS PharmSciTech. 2009; 10: 1186-1192.

105. Sambhakar S, Singh B, Paliwal S, Mishra P. Niosomes as a potential carrier for controlled release of cefuroxime axetil. Asian J Biochem Pharm Res. 2011; 1: 126-136.

106. Manconi M, Sinico C, Valenti D, Loy G, Fadda AM. Niosomes as carriers for tretinoin. I. preparation and properties. Int J Pharm 2002; 234: 237-248.

107. Manconi M, Valenti D, Sinico C, Lai F, Loy G, Fadda AM. Niosomes as carriers for tretinoin: II. influence of vesicular incorporation on tretinoin photostability. Int J Pharm. 2003; 260: 261-272.

108. Manconi M, Sinico C, Valenti D, Lai F, Fadda AM. Niosomes as carriers for tretinoin: III. a study into the *in vitro* cutaneous delivery of vesicle-incorporated tretinoin. Int J Pharm 2006; 311: 11-19.

109. Shatalebi M, Mostafavi S, Moghaddas A. Niosome as a drug carrier for topical delivery of N-acetyl glucosamine. Res Pharm Sci. 2010; 5: 107-117.

110. Manosroi A, Jantrawut P, Akazawa H, Akihisa T, Manosroi W, Manosroi J. Transdermal absorption enhancement of gel containing elastic niosomes loaded with gallic acid from *Terminalia chebula* galls. Pharm Biol. 2011; 49: 553-562.

111. Tabbakhian M, Tavakoli N, Jaafari MR, Daneshamouz S. Enhancement of follicular delivery of finasteride by liposomes and niosomes: 1. *In vitro* permeation and *in vivo* deposition studies using hamster flank and ear models. Int J Pharm 2006; 323: 1-10.

112. Lauer AC, Ramachandran C, Lieb LM, Niemec S, Weiner ND. Targeted delivery to the pilosebaceous unit via liposomes. Adv Drug Deliv Rev. 1996; 18: 311-324.

113. Patzelt A, Knorr F, Blume-Peytavi U, Sterry W, Lademann J. Hair follicles, their disorders and their opportunities. Drug Discov Today Dis Mech. 2008; 5: e173-e181.

114. Vogt A, Mandt N, Lademann J, Schaefer H, Blume-Peytavi U. Follicular Targeting-promising tool in selective dermatotherapy. J Invest Dermatol Symp Proc. 2005; 10: 252-255.

115. Gilliam A, Kremer I, Yoshida Y, SR S, Tootell E, Teunissen M, et al. The human hair follicle: a reservoir of CD40+ B7-deficient Langerhans Cells that repopulate epidermis after UVB exposure. J Invest Dermatol. 1998; 110: 422-427.

116. Vogt A, Mahe B, Costagliola D, Bonduelle O, Hadam S, Schaefer G, et al. Transcutaneous anti-influenza vaccination promotes both CD4 and CD8 T cell immune responses in humans. J Immunol 2008; 180: 1482-1489.

117. Zouboulis CC. Acne and sebaceous gland function. Clin Dermatol. 2004; 22: 360-366.

118. Battmann T, Bonfils A, Branche C, Humbert J, Goubet F, Teutsch G, et al. RU 58841, a new specific topical antiandrogen: a candidate of choice for the treatment of acne, androgenetic alopecia and hirsutism. J Steroid Biochem 1994; 48: 55-60.

119. Munster U, NakamuraNachname C, Haberland A, Jores K, Mehnert W, Rummel S, et al. RU 58841-myristate prodrug development for topical treatment of acne and androgenetic alopecia. Pharmazie 2005; 60: 8-12.

120. Ohyama M. Hair follicle bulge: a fascinating reservoir of epithelial stem cells. J Dermatol Sci. 2007; 46: 81-89.

121. Ohyama M, Vogel JC. Gene delivery to the hair follicle. J Invest Dermatol Symp Proc 2003; 8: 204-206.

122. Ito M, Liu Y, Yang Z, Nguyen J, Liang F, Morris R, et al. Stem cells in the hair follicle bulge contribute to wound repair but not to homeostasis of the epidermis. Nat Med. 2005; 11: 1351-1354.

123. Levy V, Lindon C, Harfe BD, Morgan BA. Distinct stem cell populations regenerate the follicle and interfollicular epidermis. Dev Cell. 2005; 9: 855-861.

124. Stenn KS, Cotsarelis G. Bioengineering the hair follicle: fringe benefits of stem cell technology. Curr Opin Biotechnol. 2005; 16: 493-497.

125. Stenn KS, Paus R. Controls of Hair Follicle Cycling. Physiol Rev. 2001; 81: 449-494.

126. Lademann J, Richter H, Schaefer U, Blume-Peytavi U, Teichmann A, Otberg N, et al. Hair follicles – a long-term reservoir for drug delivery. Skin Pharmacol Physiol. 2006; 19: 232-236.

127. Lademann J, Otberg N, Richter H, Weigmann HJ, Lindemann U, Schaefer H, et al. Investigation of follicular penetration of topically applied substances. Skin Pharmacol Physiol. 2001; 14: 17-22.

128. Otberg N, Richter H, Knuttel A, Schaefer H, Sterry W, Lademann J. Laser spectroscopic methods for the characterization of open and closed follicles. Laser Phys Lett. 2004; 1: 46-49.

129. Meidan VM, Docker M, Walmsley AD, Irwin WJ. Low intensity ultrasound as a probe to elucidate the relative follicular contribution to total transdermal absorption. Pharm Res. 1998; 15: 85-92.

130. Motwani M, Rhein L, Zatz J. Differential scanning calorimetry studies of sebum models. J Cosmet Sci. 2001; 52: 211-224.

131. Valiveti S, Wesley J, Lu GW. Investigation of drug partition property in artificial sebum. Int J Pharm. 2008; 346: 10-16.

132. Illel B. Formulations for transfollicular drug administration: some recent advances. Crit Rev Ther Drug Carrier Syst. 1997; 14: 207-219.

133. Grams Y, Wiechers JW, Bouwstra J. Novel ways of measuring the transfollicular transport of active ingredients across the skin. In: Wiechers JW, ed. Science and Applications of Skin Delivery Systems. Illinois: Allured Publishing Corporation; 2008. p. 424-440.

134. Silver A, Chase H, Arsenault C. Early anagen initiated by plucking compared with early spontaneous anagen. In: Montaga W, Dobson R, eds. Biology of skin. Oxford: Pergamon Press; 1975. p. 265-286.

135. Whiting D. Histology of normal hair. In: Hordinsky M, Sawaya M, Scher R, eds. Atlas of hair and nails. Philadelphia: Churchill Livingstone; 2000. p. 9-18.

136. Patzelt A, Richter H, Knorr F, Schaefer U, Lehr C-M, Dahne L, et al. Selective follicular targeting by modification of the particle sizes. J Control Release. 2011; 150: 45-48.

137. Lademann J, Richter H, Schanzer S, Knorr F, Meinke M, Sterry W, et al. Penetration and storage of particles in human skin: Perspectives and safety aspects. Eur J Pharm Biopharm. 2011; 77: 465-468.

138. Mackee GM, Sulzberger MB, Herrmann F, Baer RL, 6: 43, 1945. Histologic studies on percutaneous penetration with special reference to the effect of vehicles. J Invest Dermatol. 1945; 6: 43-61.

139. Bidmon H, Pitts J, Solomon H, Bondi J, Stumpf W. Estradiol distribution and penetration in rat skin after topical application, studied by high resolution autoradiography. Histochemistry. 1990; 95:43-54.

140. Domashenko A, Gupta S, Cotsarelis G. Efficient delivery of transgenes to human hair follicle progenitor cells using topical lipoplex. Nat Biotechnol. 2000; 18: 420-423.

141. Li L, Lishko V, Hoffman R. Liposome targeting of high molecular weight DNA to the hair follicles of histocultured skin: a model for gene therapy of the hair growth processes. *In Vitro* Cell Dev Biol Anim. 1993; 29: 258-260.

142. Hoffman RM. Topical liposome targeting of dyes, melanins, genes, and proteins selectively to hair follicles. J Drug Target. 1998; 5: 67-74.

143. Sumiana CC, Pitre FB, Gauthier BE, Bouclier M, Mordon SR. A new method to improve penetration depth of dyes into the follicular duct: potential application for laser hair removal. J Am Acad Dermatol. 1999; 41: 172-175.

144. Cross SE. Significance of follicular delivery and ways to measure it. In: Wiechers JW, ed. Science and application of skin delivery systems. Illinois: Allured Publishing Corporation; 2008. p. 441-459.

145. Burnette RR, Ongpipattanakul B. Characterization of the pore transport properties and tissue alteration of excised human skin during iontophoresis. J Pharm Sci. 1988; 77: 132-137.

146. Cullander C, Guy RH. Sites of iontophoretic current flow into the skin: identification and characterization with the vibrating probe electrode. J Invest Dermatol. 1991; 97.

147. Scott ER, White HS, Phipps JB. Direct imaging of ionic pathways in stratum corneum using scanning electrochemical microscopy. Solid State Ionics. 1992; 53-56: 176-183.

148. Cullander C. What are the pathways of iontophoretic current flow through mammalian skin? Adv Drug Deliver Rev. 1992; 9: 119-135.

149. Essa EA, Bonner M, Barry BW. Human skin sandwich for assessing shunt route penetration during passive and iontophoretic drug and liposome delivery. J Pharm Pharmacol. 2002; 54: 1481-1490.

150. Green PG, Hinz RS, Kim A, C SF, Guy RH. Iontophoretic delivery of a series of tripeptides across the skin *in vitro*. Pharm Res. 1991; 8: 1121-1127.

151. Vogt A, Combadiere B, Hadam S, Stieler K, Lademann J, Schaefer H, et al. 40 nm, but not 750 or 1,500 nm, nanoparticles enter epidermal CD1a+ cells after transcutaneous application on human skin. J Invest Dermatol. 2006; 126: 1316-1322.

152. Barry BW. Drug delivery routes in skin: a novel approach. Adv Drug Deliver Rev. 2002; 54, Supplement: S31-S40.

153. Frum Y, Bonner M, Eccleston GM, Meidan VM. The influence of drug partition coefficient on follicular penetration: *in vitro* human skin studies. Eur J Pharm Sci. 2007; 30: 280-287.

154. Frum Y, Eccleston GM, Meidan VM. Factors influencing hydrocortisone permeation into human hair follicles: use of the skin sandwich system. Int J Pharm. 2008; 358: 144-150.

155. Otberg N, Patzelt A, Rasulev U, Hagemeister T, Linscheid M, Sinkgraven R, et al. The role of hair follicles in the percutaneous absorption of caffeine. Br J Clin Pharmacol. 2007; 65: 488-492.

156. Teichmann A, Otberg N, Jacobi U, Sterry W, Lademann J. Follicular penetration: development of a method to block the follicles selectively against the penetration of topically applied substances. Skin Pharmacol Physiol. 2006; 19: 216-223.

157. Otberg N, Teichmann A, Rasuljev U, Sinkgraven R, Sterry W, Lademann J. Follicular penetration of topically applied caffeine via a shampoo formulation. Skin Pharmacol Physiol. 2007; 20: 195-198.

158. Teichmann A, Jacobi U, Ossadnik M, Richter H, Koch S, Sterry W, et al. Differential stripping: determination of the amount of topically applied substances penetrated into the hair follicles. J Gen Intern Med. 2005; 20: 264-269.

159. Patzelt A, Richter H, Buettemeyer R, Huber HJR, Blume-Peytavi U, Sterry W, et al. Differential stripping demonstrates a significant reduction of the hair follicle reservoir *in vitro* compared to in vivo. Eur J Pharm Biopharm. 2008; 70: 234-238.

160. Papazisis KT, Geromichalos GD, Dimitriadis KA, Kortsaris AH. Optimization of the sulforhodamine B colorimetric assay. J Immunol Methods. 1997; 208: 151-158.

161. Vichai V, Kirtikara K. Sulforhodamine B colorimetric assay for cytotoxicity screening. Nat Protoc 2006; 1: 1112-1116.

162. Manosroi A, Khositsuntiwong N, Komno C, Manosroi W, Werner RG, Manosroi J. Chemical stability and cytotoxicity of human insulin loaded in cationic DPPC/CTA/DDAB liposomes. J Biomed Nanotechnol. 2011; 7: 308-316.

163. Manosroi J, Lohcharoenkal W, Götz F, Werner RG, Manosroi W, Manosroi A. Transdermal absorption enhancement of n-terminal tat–GFP fusion protein (TG) loaded in novel low-toxic elastic anionic niosomes. J Pharm Sci. 2011; 100: 1525-1534.

164. Hu DN. Methodology for evaluation of melanin content and production of pigment cells *in vitro*. Photochem Photobiol. 2008; 2008: 645-649.

165. Oka M, Ilzuka N, Yamanoto K, Gondo T, Abe T, Hazama S, et al. The influence of interleukin-6 on the growth of human esophageal cancer cell lines. J Interf Cytok Res. 1996; 16: 1001-1006.

166. Nakashima S, Matsuda H, Oda Y, Nakamura S, Xu F, Yoshikawa M. Melanogenesis inhibitors from the desert plant *Anastatica hierochuntica* in B16 melanoma cells. Bioorg Med Chem. 2010; 18: 2337-2345.

167. Ohguchi K, Banno Y, Nakagawa Y, Akao Y, Yoshinori N. Negative regulation of melanogenesis by phospholipase D1 through mTOR/p70 S6 kinase 1 signaling in mouse B16 melanoma cells. J Cell Physiol. 2005; 205: 444-451.

168. Tsukamoto K, Jackson IJ, Urabe K, Montague PM, Hearing VJ. A second tyrosinase-related protein, TRP-2, is a melanogenic enzyme termed DOPAchrome tautomerase. EMBO J. 1992; 11: 519-526.

169. Barber JI, Townsend D, Olds DP, King RA. Dopachrome oxidoreductase: a new enzyme in the pigment pathway. J Invest Dermatol. 1984; 83: 145-149.

170. Tsuboi T, Kondoh H, Hiratsuka J, Mishima Y. Enhanced melanogenesis induced by tyrosinase gene-transfer increases boron-uptake and killing effect of boron neutron capture therapy for amelanotic Melanoma. Pigment Cell Res. 1998; 11: 275-282.

171. Nishimura EK, Granter SR, Fisher DE. Mechanisms of hair graying: incomplete melanocyte stem cell maintenance in the niche. Science. 2005; 307: 720-724.

172. Borovansky J, Melezinek I, Buděsinska A. Interference of melanin in protein determination. Anal Biochem. 1986; 159: 249-252.

173. Bradford MM. A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. Anal Biochem. 1976; 72: 248-254.

174. Draize JH, Woodard G, Calvery HO. Methods for the study of irritation and toxicity of substances applied to the skin and mucous membranes. J Pharmacol Exp Ther. 1944; 82: 377-390.

175. Bashir SJ, Maibach HI. In vivo irritation. In: Barel AO, Paye M, Maibach HI, eds. Handbook of cosmetic science and technology. New york: Marcel Dekker, Inc.; 2001. p. 107-118.

176. Organisation for Economic Cooperation and Development (OECD). OECD Guideline for the testing of chemicals-Guideline 404: acute dermal irritation/corrosion. Paris, France; 2002.

177. Kodithala K, Hopfinger AJ, Thompson ED, Robinson MK. Prediction of skin irritation from organic chemicals using membrane-interaction QSAR analysis. Toxicol Sci. 2002; 66: 336-346.

178. Faller C, Bracher M, Dami N, Roguet R. Predictive ability of reconstructed human epidermis equivalents for the assessment of skin irritation of cosmetics. Toxicol *In Vitro*. 2002; 16: 557-572.

179. Basketter DA, York M, McFadden JP, Robinson MK. Determination of skin irritation potential in the human 4-h patch test. Contact Dermatitis. 2004; 51: 1-4.

180. Faas L, Venkatasamy R, Hider RC, Young AR, Soumyanath A. *In vivo* evaluation of piperine and synthetic analogues as potential treatments for vitiligo using a sparsely pigmented mouse model. Br J Dermatol. 2008; 158: 941-950.

181. Get Away Grey Ingredients [homepage on the internet]. USA: Get Away Grey [cited 2012 Sep 4]. Available from: http://www.getawaygrey.com/ getawaygrey-ingredients

182. Bawang BAWANG hair darkening blackening renewal shampoo & strengthen cond. [homepage on the internet]. USA: eBay Inc. [cited 2012 Sep 4]. Available from: http://www.ebay.com/itm/ Bawang-BA-WANG-Hair-Darkening-Blackening-Renewal-Shampoo-Strengthen-Cond-NEW-/ 110802438442

183. Noni black hair magic [homepage on the internet]. Singapore: Nutrimax Organic [cited 2012 Sep 4]. Available from: http://nutrimaxorganic.com/ products/ noni_black_hair_magic.html

184. O'LIYE herbal blackening shampoo (Korea) [homepage on the internet]. Malaysia: Guangzhou Sanzi Cosmetics Co., Ltd. [cited 2012 Sep 4]. Available from: http://www.lelong.com.my/o-liye-herbal-blackening-shampoo-korea-62451987-2011-06-Sale-P.htm

185. Natural-in-black hair cream [homepage on the internet]. Singapore: Naturo Health International [cited 2012 Sep 4]. Available from: http://www. lifeplus.com.sg/NaturalBlackHairCream.htm

186. Hair darkening oil [homepage on the internet]. Malaysia: Desyham [cited 2012 Sep 4]. Available from: http://desyham.com/Hair-Oil.php

187. Guan S, Su W, Wang N, Li P, Wang Y. A potent tyrosinase activator from *Radix polygoni* multiflori and its melanogenesis stimulatory effect in B16 melanoma cells. Phytother Res. 2008; 22: 660-663.

188. Xu G, Xu C, inventors. A chinese medicinal capsule for the treatment of canities and alopecia. China, Peop. Rep. Patent; 2000.

189. Deng Y, Yang L. Effect of *Angelica sinensis* (Oliv.) on melanocytic proliferation, melanin synthesis and tyrosinase activity in vitro. Di Yi Jun Yi Da Xue Xue Bao. 2003; 23: 239-241.

190. Zhu W, Gao J. The use of botanical extracts as topical skin-lightening agents for theimprovement of skin pigmentation disorders. J Invest Dermatol Symp Proc. 2008; 13:20-24.

191. Chien CC, Tsai ML, Chen CC, Chang SJ, Tseng CH. Effects on tyrosinase activity by the extracts of *Ganoderma lucidum* and related mushrooms. Mycopathologia. 2008; 166: 117-120.

192. Choi S, Park YI, Lee SK, Kim JE, Chung MH. Aloesin inhibits hyperpigmentation induced by UV radiation. Clin Exp Dermatol. 2002; 27: 513-515.

193. Wu KK, She JR, Wang HY. Chinese medicinal plants up-regulate melanin biosynthesis in vitro. In: Lawrence BM, ed. Naturals and organics in cosmetics: from R&D to the marketplace. Illinois: Allured Publishing Corporation; 2007. p. 251-259.

194. Ancans J, Thody AJ. Activation of melanogenesis by vacuolar type H+-ATPase inhibitors in amelanotic, tyrosinase positive human and mouse melanoma cells. FEBS Lett. 2000; 478: 57-60.

195. Fernandes SS, Arcuri R, Morgado-Díaz JA, Benchimol M. Increase of melanogenesis by retinoic acid: an ultrastructural and morphometric study. Tissue Cell. 2004; 36: 95-105.

196. Venkatasamy R, Faas L, Young AR, Raman A, Hider RC. Effects of piperine analogues on stimulation of melanocyte proliferation and melanocyte differentiation. Bioorg Med Chem 2004; 12: 1905-1920.

197. Holcapek M, Jandera P, Fischer J. Analysis of acylglycerols and methyl esters of fatty acids in vegetable oils and in biodiesel. Crit Rev Anal Chem. 2001; 31: 53-56.

198. Miguel A, Castanho RB, Nuno C, Santos S, Luís MS. Separating the turbidity spectra of vesicles from the absorption spectra of membrane probes and other chromophores. Eur Biophys J. 1997; 26: 253-259.

199. Otberg N, Richter H, Schaefer H, Blume-Peytavi U, Sterry W, Lademann J. Variations of hair follicle size and distribution in different body sites. J Invest Dermatol. 2004; 122: 14-19.

200. Plessis J, Egbaria K, Weiner N. Influence of formulation factors on the deposition of liposomal components into the different strata of the skin. J Soc Cosmet Chem. 1992; 43: 93-100.

201. Foldvari M, Kumar P, King M, Batta R, Michel D, Badea I, et al. Gene delivery into human skin *in vitro* using biphasic lipid vesicles. Curr Drug Deliv. 2006; 3: 89-93.

202. Padula C, Colombo G, Nicoli S, Catellani PL, Massimo G, Santi P. Bioadhesive film for the transdermal delivery of lidocaine: *in vitro* and *in vivo* behavior. J Control Release. 2003; 88: 277-285.

203. Zuidam NJ, Gouw HKME, Barenholz Y, Crommelin DJA. Physical (in) stability of liposomes upon chemical hydrolysis: the role of lysophospholipids and fatty acids. BBA-Biomembranes. 1995; 1240: 101-110.

204. Matsuzaki K, Murase O, Sugishita Ki, Yoneyama S, Akada Ky, Ueha M, et al. Optical characterization of liposomes by right angle light scattering and turbidity measurement. BBA-Biomembranes. 2000; 1467: 219-226.

205. Zhuang L, Kim J, Adam RM, Solomon KR, Freeman MR. Cholesterol targeting alters lipid raft composition and cell survival in prostate cancer cells and xenografts. J Clin Invest. 2005; 115: 959-968.

206. Hu F. Theophylline and melanocyte-stimulating hormone effects on gamma-glutamyl transpeptidase and dopa reactions in cultured melanoma cells. J Invest Dermatol. 1982; 79: 57-62.

207. Busca R, Ballotti R. Cyclic AMP a key messenger in the regulation of skin pigmentation. Pigment Cell Res. 2000; 13: 60-69.

208. Maeda K, Yokokawa Y, Hatao M, Naganuma M, Tomita Y. Comparison of the melanogenesis in human black and light brown melanocytes. J Dermatol Sci. 1997; 14: 199-206.

209. Shibahara S, Yasumoto KI, Amae S, Udono T, Watanabe KI, Saito H, et al. Regulation of pigment cell-specific gene expression by MITF. Pigment Cell Res. 2000; 13: 98-102.

210. Ancans J, Tobin DJ, Hoogduijn MJ, Smit NP, Wakamatsu K, Thody AJ. Melanosomal pH controls rate of melanogenesis, eumelanin/phaeomelanin ratio and melanosome maturation in melanocytes and melanoma cells. Exp Cell Res. 2001; 268: 26-35.

211. Kummerow FA. Modification of cell membrane composition by dietary lipids and its implications for atherosclerosis Ann NY Acad Sci. 1983; 414: 29-43.

212. Naeyaert JM, Eller M, Gordon PR, Park HY, Gilchrest BA. Pigment content of cultured human melanocytes does not correlate with tyrosinase message level. Br J Dermatol. 1991; 125: 297-303.

213. Iozumi K, Hoganson GE, Pennella R, Everett MA, Fuller BB. Role of tyrosinase as the determinant of pigmentation in cultured human melanocytes. J Invest Dermatol. 1993; 100: 806-811.

214. Weiner N, Martin FJ, Riaz M. Liposomes as a drug delivery system. Drug Dev Ind Pharm. 1989; 15: 1523-1554.

215. Carafa M, Santucci E, Lucania G. Lidocaine-loaded non-ionic surfactant vesicles: characterization and *in vitro* permeation studies. Int J Pharm. 2002; 231: 21-32.

216. Nooprasit I. Influence of lipid composition, liposome charge and pH of hydration medium on the physicochemical properties and stability of amphotericin B liposomes (Dissertation). Bangkok, Mahidol University; 2000.

217. Kaparissides C, Alexandridou S, Kotti K, Chaitidou S. Recent advances in novel drug delivery systems. Azojono J Nanotechnol Online. [cited 2011 Dec 16]. Available from: http://www.azonano.com/article. aspx?ArticleID=1538

218. Manosroi A, Khanrin P, Werner RG, Gotz F, Manosroi W, Manosroi J. Entrapment enhancement of peptide drugs in niosomes. J Microencapsulation 2010; 27: 272-280.

219. de Haas KH, Blom C, van den Ende D, Duits MHG, Haveman B, Mellema J. Rheological behavior of a dispersion of small lipid bilayer vesicles. Langmuir. 1997; 13:6658-6668.

220. Manosroi A, Khanrin P, Lohcharoenkal W, Werner RG, Götz F, Manosroi W, et al. Transdermal absorption enhancement through rat skin of gallidermin loaded in niosomes. Int J Pharm. 2010; 392: 304-310.

221. Junyaprasert V, Teeranachaideekul V, Supaperm T. Effect of charged and non-ionic membrane additives on physicochemical properties and stability of niosomes. AAPS PharmSciTech. 2008; 9: 851-859.

222. Izuishi K, Kato K, Ogura T, Kinoshita T, Esumi H. Remarkable tolerance of tumor cells to nutrient deprivation: possible new biochemical target for cancer therapy. Cancer Res. 2000; 60: 6201-6207.

223. Hirama S, Tatsuishi T, Iwase K, Nakao H, Umebayashi C, Nishizaki Y, et al. Flow-cytometric analysis on adverse effects of polysorbate 80 in rat thymocytes. Toxicology. 2004; 199: 137-143.

224. Iwase K, Oyama Y, Tatsuishi T, Yamaguchi J, Nishimura Y, Kanada A, et al. Cremophor EL augments the cytotoxicity of hydrogen peroxide in lymphocytes dissociated from rat thymus glands. Toxicol Lett. 2004; 154: 143-148.

225. Tatsuishi T, Oyama Y, Iwase K, Yamaguchi J, Kobayashi M, Nishimura Y, et al. Polysorbate 80 increases the susceptibility to oxidative stress in rat thymocytes. Toxicology. 2005; 207: 7-14.

226. Burgalassi S, Chetoni P, Monti D, Saettone MF. Cytotoxicity of potential ocular permeation enhancers evaluated on rabbit and human corneal epithelial cell lines. Toxicol Lett. 2001; 122: 1-8.

227. Ganesh GNK, Gowthamarajan K, Kumar RS, Senthil V, Jawahar N, Venkatesh N, et al. Formulation and evaluation of liposomal drug delivery system for an anticancer drug and the study effect of various stabilizers based on physiochemical and *in vitro* characterization. IJPRD. 2011; 3: 27-37.

228. Drin G, Cottin S, Blanc E, Rees AR, Temsamani J. Studies on the internalization mechanism of cationic cell-penetrating peptides. J Biol Chem. 2003; 278: 31192-31201.

229. Huang YZ, Gao JQ, Chen JL, Liang WQ. Cationic liposomes modified with non-ionic surfactants as effective non-viral carrier for gene transfer. Colloid Surface B. 2006; 49: 158-164.

230. McNeil SE, Perrie Y. Gene delivery using cationic liposomes. Expert Opin Ther Pat. 2006; 16: 1371-1382.

231. Jin S, Lee Y, Kang H. Methyl-*β*-cyclodextrin, a specific cholesterol-binding agent, inhibits melanogenesis in human melanocytes through activation of ERK. Arch Dermatol Res. 2008; 300: 451-454.

232. Palumbo A, Solano F, Misuraca G, Aroca P, Garcia Borron JC, Lozano JA, et al. Comparative action of dopachrome tautomerase and metal ions on the rearrangement of dopachrome. BBA-Gen Subjects. 1991; 1115: 1-5.

233. Calabrese EJ. Gastrointestinal and dermal absorption: interspecies differences. Drug Metab Rev. 1984; 15: 1013-1032.

234. Benech-Kieffer F, Wegrich P, Schwarzenbach R, Klecak G, Weber T, Leclaire J, et al. Percutaneous absorption of sunscreens *in vitro*: interspecies comparison, skin models and reproducibility aspects. Skin Pharmacol Physiol. 2000; 13: 324-335.

235. Jenning V, Gysler A, Schäfer-Korting M, Gohla SH. Vitamin A loaded solid lipid nanoparticles for topical use: occlusive properties and drug targeting to the upper skin. Eur J Pharm Biopharm. 2000; 49: 211-218.

236. Manosroi A, Ruksiriwanich W, Abe M, Manosroi W, Manosroi J. Transfollicular enhancement of gel containing cationic niosomes loaded with unsaturated fatty acids in rice (*Oryza sativa*) bran semi-purified fraction. Eur J Pharm Biopharm. 2012; 81: 303-313.

237. Teichmann A, Ossadnik M, Richter H, Sterry W, Lademann J. Semiquantitative determination of the penetration of a fluorescent hydrogel formulation into the hair follicle with and without follicular closure by microparticles by means of differential stripping. Skin Pharmacol Physiol. 2006; 19: 101-105.

238. Li L, Hoffman R. Topical liposome delivery of molecules to hair follicles in mice. J Dermatol Sci. 1997; 14: 101-108.

239. Venuganti VV, Perumal OP. Poly(amidoamine) dendrimers as skin penetration enhancers:influence of charge, generation, and concentration. J Pharm Sci. 2009; 98: 2345-2356.

240. Jung S, Otberg N, Thiede G, Richter H, Sterry W, Panzner S, et al. Innovative liposomes as a transfollicular drug delivery system: penetration into porcine hair follicles. J Invest Dermatol. 2006; 126: 1728-1732.

241. Meyer W, Zschemisch NH. Skin layer thickness at the ear of the domesticated pig with special reference to the use of the ear integument for human dermatological research. Berl Munch Tierarztl Wschr. 2002; 115: 401-406.

242. Von Rybinski W, Hill K. Novel surfactants. In: Holmberg K, ed. Preparation, applications, and biodegradability. 2nd ed. New York: Marcel Dekker; 2003: p. 35-93.

243. Macián M, Seguer J, Infante MR, Selve C, Vinardell MP. Preliminary studies of the toxic effects of non-ionic surfactants derived from lysine. Toxicology. 1996; 106: 1-9.

244. Kondo T, Tomizawa M. Hemolysis by nonionic surface-active agents. J Pharm Sci. 1968; 57: 1246-1248.

245. Helenius A, Simons K. Solubilization of membranes by detergents. Biochim Biophys Acta. 1975; 415: 29-80.

246. Jones MN. Surfactants in membrane solubilisation. Int J Pharm 1999; 177: 137-159.

247. Kondo T. Mechanisms of haemolysis by surface active agents. Adv Colloid Interface Sci. 1976; 6: 139-172.

248. Isomaa B, Engblom AC, Hägerstrand H. On the time-dependence of amphiphile-induced haemolysis. Toxicology. 1988; 48: 285-291.

249. Bielawski J. Two types of haemolytic activity of detergents. BBA-Gen Subjects. 1990; 1035: 214-217.

250. Shafiq-un-Nabi S, Shakeel F, Talegaonkar S, Ali J, Baboota S, Ahuja A, et al. Formulation development and optimization using nanoemulsion technique: a technical note. AAPS PharmSciTech. 2007; 8: E12-E17.

251. Shukla JB, Patel SJ. Formulation and evaluation of self micro emulsifying system of candesartan cilexetil. Int J Pharm Sci. 2010; 2: 143-146.

252. Paavola A, Yliruusi J, Rosenberg P. Controlled release and dura mater permeability of lidocaine and ibuprofen from injectable poloxamer-based gels. J Control Release. 1998; 52: 169-178.

253. Zlotogorski A. Distribution of skin surface pH on the forehead and cheek of adults. Arch Dermatol Res 1987; 279: 398-401.

254. Gruber JV. Polysaccharide-based polymers in cosmetics. In: Goddard ED, Gruber JV, eds. Principle of polymer science and technology in cosmetics and personal care. New York: Marcel Dekker, Inc.; 1999. p. 325-389.

255. Zigoneanu I, Williams L, Xu Z, Sabliov C. Determination of antioxidant components in rice bran oil extracted by microwave-assisted method. Bioresour Technol. 2008; 99: 4910-4918.

256. Sabliov C, Fronczek C, Astete C, Khachaturyan M, Khachatryan L, Leonardi C. Effects of temperature and UV light on degradation of α-tocopherol in free and dissolved Form. J Am Oil Chem Soc 2009; 86: 895-902.

257. Lopes da Silva JAL, Rao MA. Rheological behavior of food gel system. In: Rao MA, ed. Rheology of fluid and semisolid foods. Gaithersburg: Aspen Publication, Inc.; 1999. p. 219-318.

258. Zecher D, Van Coillie R. Cellulose derivatives. In: Imeson A, ed. Thickening and gelling agents for food. Glasgow: Blackie A & P; 1992. p. 40-65.

259. Mullerdecker K, Furstenberger G, Marks F. Keratinocyte-derived proinflammatory key mediators and cell viability as in vitro parameters of irritancy: a possible alternative to the Draize skin irritation test. Toxicol Appl Pharm 1994; 127: 99-108.

260. Burchill SA, Thody AJ. Melanocyte-stimulating hormone and the regulation of tyrosinase activity in hair follicular melanocytes of the mouse. J Endocrinol. 1986; 111: 225-232.

261. Sheehan D, Hrapchak B. Theory and practice of histotechnology 2nd ed. Ohio: Battelle Press; 1980.