

7. Literaturverzeichnis

- Ademola J.I., Maibach H.I.: Cutaneous metabolism and penetration of methoxysoralen, betamethasone 17-valerate, retinoic acid, nitroglycerin and theophylline. exogenous Dermatol 1995; 22: 201-213
- Agarwal R., Katare O.P., Vyas S.P.: The pilosebaceous unit: a pivotal route for topical drug delivery. Methods Find Exp Clin Pharmacol 2000; 22: 129-133
- Andega S., Kanikkannan N., Singh M.: Comparison of the effect of fatty alcohols on the permeation of melatonin between porcine and human skin. J Control Release 2001; 77: 17-25
- Andreassi L., Giannetti A., Milani M.: Therapeutics efficacy of betamethasone valerate mousse in comparison with standard therapies on scalp psoriasis: an open, multicentre, randomized, controlled, cross-over study on 241 patients. Br J Dermatol 2003; 148: 134-138
- Barnes P.J.: Anti-inflammatory actions of glucocorticoids: molecular mechanisms. Clin Sci 1998; 94: 557-572
- Baroli B., Lopez-Quintela M.A., Delgado-Charro M.B., Fadda A.M., Blanco-Mendez J.: Mikroemulsions for topical delivery of 8-methoxsalen. J Control Release 2000; 69: 209-218
- Barry B.W.: Lipid-protein-partitioning of skin penetration enhancement. J Control Release 1991; 15: 237-248
- Barry B.W.: Mode of action of penetration enhancers in human skin. J Control Release 1987; 6: 85-97
- Bauer K.H.: Polymere: Einsatz in der pharmazeutischen technologie. Deutsche Apotheker Zeitung 1990; 130-9: 447-462
- Bauer F.W., Boezeman J.B.M., Rijzewijk J.J., de Groot R.M.: Topical corticosteroids delay the proliferative response to sellotape stripping. Skin Pharmacol 1989; 2: 204-209
- Bendas B., Schmalfuß U., Neubert R.: Influence of propylene glycol as cosolvent on mechanisms of drug transport from hydrogels. Int J Pharm 1995; 116: 19-30
- Bernard E., Dubois J.L., Wepierre J.: Importance of sebaceous glands in cutaneous penetration of an antiandrogen: target effect of liposomes. J Pharm Sci 1997; 86: 573-578
- Bernard E., Dubois J.L., Wepierre J.: Percutaneous absorption of a new antiandrogen included in liposomes or in solution. Int J Pharm 1995; 126: 235-243
- Betz G., Imboden R., Imanidis G.: Interaction of liposome formulations with human skin in vitro. Int J Pharm 2001; 229: 117-129
- Bosman A.W., Janssen H.M., Meijer E.W.: About dendrimers: structure, physical properties and applications. Chem Rev 1999; 99: 1665-1688
- Bouwstra J.A., Gooris G.S., Dubbelaar F.E.R., Ponec M.: Phase behaviour of lipid mixtures based on human stratum corneum ceramides. J Lipid Res 2001; 42: 1759-1770
- Bouwstra J.A., Honeywell-Nguyen P.L.: Skin structure and mode of action of vesicles. Adv Drug Deliv Rev 2002; 54: 41-55
- Bouwstra J.A., Honeywell-Nguyen P.L., Gooris G.S., Ponec M.: Structure of the skin barrier and its modulation by vesicular formulations. Progr Lipid Res 2003; 42: 1-36
- Bundgaard H., Hansen J.: Studies on the stability of corticosteroids VI. Kinetics of the rearrangement of betamethasone 17-valerate to the 21-valerate ester in aqueous solution. Int J Pharm 1981; 7: 197-203

- Bunjes H., Westesen K., Koch M.H.J.: Crystallization tendency and polymorphic transitions in triglyceride nanoparticles. *Int J Pharm* 1996; 129: 159-173
- Bunjes H., Drechsler M., Koch M.H.J., Westesen K.: Incorporation of the model drug ubidecarenone into solid lipid nanoparticles. *Pharm Res* 2001; 18: 287-293
- Buske-Kirschbaum A., Jobst S., Hellhammer D.H.: Altered reactivity of the hypothalamus-pituitary-adrenal axis in patients with atopic dermatitis: pathologic factor or symptom? *Ann N Y Acad Sci* 1998; 840: 747-754
- Calvo P., Vila-Jato J.L., Alonso M.: Comparative in vitro evaluation of several colloidal systems, nanoparticles, nanocapsules and nanoemulsions, as ocular drug carriers. *J Pharm Sci* 1996; 85: 530-536
- Chauhan A.S., Sridevi S., Chalasani K.B., Jain A.K., Jain S.K., Jain N.K., Diwan P.V.: Dendrimer-mediated transdermal delivery: enhanced bioavailability of indomethacin. *J Control Release* 2003; 90: 335-343
- Cheung Y.W., Li Wan Po A., Irwin W.J.: Cutaneous biotransformation as a parameter in the modulation of the activity of topical corticosteroids. *Int J Pharm* 1985; 26 : 175-189
- Chien Y.W.: Advance in transdermal systemic medication; in Chien Y.W. (Hrsg): Drugs and the pharmaceutical science. Marcel Dekker, New York, 31; 1987
- Couvreur P., Dubernet C., Puisieux F.: Controlled drug delivery with nanoparticles: current possibilities and future trends. *Euro J Pharm Biopharm* 1995; 41: 2-13
- Cutroneo K.R.: Relationship between glucocorticoid-mediated early decrease of protein synthesis and the steady state decreases of glucocorticoid receptor and TGF-beta activator protein. *Int J Biochem Cell Biol* 2002; 34: 194-203
- De Bosscher K., Vanden Berghe W., Haegeman G.: Mechanisms of anti-inflammatory action and of immunosuppression by glucocorticoids: negative interference of activated glucocorticoid receptor with transcription factors. *J Neuroimmunol* 2000; 109: 16-22
- Diepgen, T.L., Fartasch, M.: Recent epidemiological and genetic studies in atopic eczema. *Acta Derm.-Venereol.*, Suppl. (Stockholm) 176, 13-18 1992
- Dingler A., Blum R.P., Niehus H., Müller R.H., Gohla S.: Solid lipid nanoparticles (SLNTM/LipopearlsTM) - a pharmaceutical and cosmetic carrier for the application of vitamin E in dermal products. *J Microcapsul* 1999; 16: 751-767
- Dingler A.: Feste Lipid-Nanopartikel als kolloidale Wirkstoffträgersysteme zur dermalen Applikation. Freie Universität Berlin, Berlin 1998
- El-Kattan A.F., Asbill C.S., Kim N., Michniak B.B.: The effects of terpene enhancers on the percutaneous permeation of drugs with different lipophilicities. *Int J Pharm* 2001; 215: 229-240
- El Maghraby G.M.M., Williams A.C., Barry B.W.: Skin delivery of oestradiol from lipid vesicles: importance of liposome structure. *Int J Pharm* 2000; 204: 159-169
- Farin F., Lambers H., Keuning W., Van der Wilden W.: Human skin-identical ceramides. *Cosmet Toiletries* 1995; 3: 126-132
- Feldman S.R., Sangha N., Setaluri V.: Topical corticoesteroid in foam vehicle offers comparable coverage compared with traditional vehicles. *J Am Acad Dermatol* 2000; 1017-1021

Literatuverzeichnis

- Fiedler H P.: Lexikon der Hilfsstoffe für Pharmazie, Kosmetik und angrenzende Gebiete. Editio Cantor Verlag Aulenhof, 4. Auflage, 1996
- Franz T.J.: On the relevance of in vitro date. J Invest Dermat 1975; 64: 190-195
- Franz T.J., Parsell D.A., Halualani R.M., Hannigan J.F., Kalbach J.P., Harkonen W.S.: Betamethasone valerate foam 0.12%: a novel vehicle with enhanced delivery and efficacy. Int J Dermatol 1999; 38: 628-632
- Fresta M., Puglisi G.: Application of liposomes as potential cutaneous drug delivery systems. in vitro and in vivo investigations with radioactively labelled vesicles. J Drug Target 1996; 4: 95-101
- Freitas C., Müller R.H.: Effect of light and temperature on zeta potential and physical stability in solid lipid nanoparticle (SLNTM) dispersions. Int J Pharm 1998; 168: 221-229
- Freitas C., Müller R.H.: Correlation between long-term stability of solid lipid nanoparticles (SLNTM) and crystallinity of the lipid phase. Euro J Pharm Biopharm 1999; 47: 125-132
- Goldring M., Goldring S.R.: Cytokines and cell growth control. Crit Rev Eukaryot Gene Expr 1991; 1: 301-326
- Gorukanti S.R., Li L., Kim K.H.: Transdermal delivery of antiparkinsonian agent, benztropine. I. Effect of vehicles on skin permeation. Int J Pharm 1999; 192: 159-172
- Göttlicher M., Heck S., Herrlich P.: Transcriptional cross-talk, the second mode of steroid hormone receptor action. J Mol Med 1998; 76: 480-489
- Gregoriadis G.: Overview of liposomes. J Antimicro Chemoth 1991; 28: 39-48
- Gysler A., Lange K., Korting H.C., Schäfer-Korting M.: Prednicarbate biotransformation in human foreskin keratinocytes and fibroblasts. Pharm Res 1997; 14: 793-797
- Gysler A.: Vergleichende Untersuchungen zu Biotransformation und Penetrationsverhalten halogenierter und nichthalogenierter topischer Glucocorticoide. Freie Universität Berlin, Berlin 1998
- Hasegawa S., Pawankar R., Suzuki K., Nakahata T., Furukawa S., Okumura K., Ra C.: Functional expression of the high affinity receptor for IgE (Fcepsilon RI) in human platelets and ist' intracellular expression in human megakaryocytes. Blood 1999; 93: 2543-2551
- Hein R., Korting H.C., Mehring T.: Differential effect of medium potent nonhalogenated double-ester-type and conventional glucocorticoids on proliferation and chemotaxis of fibroblasts in vitro. Skin Pharmacol 1994; 7: 300-306
- Hein R., Krieg T.: Effects of corticosteroids on human fibroblasts in vitro; in Christphers E., Schöpf E., Kligman A.M. et al (eds): Topical corticosteroid therapy, a Novel Approach to Safer Drugs. New York, Raven Press, 1988: 57-65
- Honeywell-Nguyen P., de Graaff A.M., Wouter Groenink H.W., Bouwstra J.A.: The in vivo and in vitro interactions of elastic and rigid vesicles with human skin. Biochim Biophys Acta 2002; 1573: 130-140
- Honeywell-Nguyen P., Wouter Groenink H.W., de Graaff A.M., Bouwstra J.A.: The in vivo transport of elastic vesicles into human skin: effects of occlusion, volume and duration of application. J Control Release 2003; 90: 243-255

- Hunt C.A., Tsang S.: Alpha-tocopherol retards autoxidation and prolongs shelf life of the liposomes. *Int J Pharm* 1995; 8: 101-110
- Imokawa G., Abe A., Jin K., Higaki Y., Kawashima M., Hidano A.: Decreased level of ceramides in stratum corneum of atopic dermatitis: an etiologic factor in atopic dry skin?. *J Invest Dermatol* 1991; 96: 523-526
- Jenning V., Schäfer-Korting M., Gohla S.: Vitamin A-loaded solid lipid nanoparticles for topical use: drug release properties. *J Control Release* 2000; 66: 115-126 A
- Jenning V.: Feste Lipid-Nanopartikel (SLN™) als Trägersystem für die dermale Applikation von Retinol: Wirkstoffinkorporation, -freisetzung und Struktur. Dissertation Freie Universität Berlin, 1999
- Jenning V., Gysler A., Schäfer-Korting M., Gohla S.H.: Vitamin A loaded solid lipid nanoparticles for topical use: occlusive properties and drug targeting to the upper skin. *Euro J Pharm Biopharm* 2000; 49: 211-218 B
- Jenning V., Thünemann A.F., Gohla S.H.: Characterisation of a novel solid lipid nanoparticle carrier system based on binary mixtures of liquid and solid lipids. *Int J Pharm* 2000; 199: 167-177 C
- Jores K., Liedtke S., Mehnert W., Mäder K.: Characterization of solid lipid nanoparticles (SLN™) – how to optimize the quantity of surfactants. *Proceed Intern Symp Control Rel Bioact* 2000; 27: 1092-1093
- Jores K., Mehnert W., Mäder K.: Physicochemical investigation on solid lipid nanoparticles and on oil-loaded solid lipid nanoparticles: a nuclear magnetic resonance and electron spin resonance study. *Pharm Res* 2003; 20: 1274-1283
- Kubota K., Ademola J., Maibach H.i.: metabolism and degradation of betamethasone 17-valerate in homogenized living skin equivalent. *Dermatology* 1994; 188: 13-17
- Kutsch C.L., Norris D.A., Arend W.P.: Tumor necrosis factor α induces interleukin-1- α and interleukin-1 receptor antagonism production by cultured human keratinocytes. *J Invest Dermatol* 1993; 101: 79-85
- Korting H.C., Zienicke H., Schäfer-Korting M.: Braun-Falco O.: Liposome encapsulation improves efficacy of betamethasone dipropionate in atopic eczema but not in psoriasis vulgaris. *Eur J Clin Pharmacol* 1991; 29: 349
- Korting H.C., Vieluf D., Lerscher M.: 0.25% prednicarbate cream and the corresponding vehicle induce less skin atrophy than 0.1% betamethasone 17-valerate cream and 0.05% clobetasol 17-propionate cream. *Eur J Clin Pharmacol* 1992; 42: 159-161
- Korting H.C., Hulsebus E., Kerscher M., Greber R., Schäfer-Korting M.: Discrimination of the toxic potential of chemically differing topical glucocorticoids using a neutral red release assay with human keratinocytes and fibroblasts. *Br J Dermatol* 1995; 133: 54-49
- Korting H.C., Unholzer A., Schäfer-Korting M., Tausch I., Gassmueller J., Nietsch K.H.: Different skin thinning potential of equipotent medium-strength glucocorticoids. *Skin Pharmacol Appl Skin Physiol* 2002; 15: 85-91
- Kreilgaard M.: Influence of microemulsions on cutaneous drug delivery. *Adv Drug Deliv Rev* 2002; 54: 77-98

Literatuverzeichnis

- Lange K., Kleuser B., Gysler A., Bader M., Maia C., Scheidereit C., Korting H.C., Schäfer-Korting M.: Cutaneous inflammation and proliferation in vitro: differential effects and mode of action of topical glucocorticoids. *Skin Pharmacol Appl Skin Physiol* 2000; 13: 93-103
- Lehmann L., Keipert S., Gloor M.: Effects of microemulsions on the stratum corneum and hydrocortisone penetration. *Eur J Pharm Biopharm* 2001; 52: 129-136
- Leung, D.Y., Geha, R.S.: Immunoregulatory abnormalities in atopic dermatitis. *Clin Rev Allergy* 1986; 4: 67-86.
- Li L., Margolis L.B., Lishko V.K., Hoffmann R.M.: Product delivering liposomes specifically target hair follicles in histocultured intact skin. *In Vitro Cell Dev Biol* 1992; 28A: 679-681
- Lieb L.M., Ramachandran C., Egbaria K., Weiner N.: Topical delivery enhancement with multilamellar liposomes into pilosebaceous units: In vitro evaluation using fluorescent techniques with the hamster ear model. *J Invest Dermatol* 1992; 99: 108-113
- Liu M., Frechet J.M.: Designing dendrimers for drug deliver. *J Pharm Sci Technol Today* 1999; 2: 393-401
- Liu M., Kono K., Frechet J.M.: Water-soluble dendritic unimolecular micelles: their potential as drug delivery agents. *J Control Release* 2000; 65:121-131
- Mahlstedt K., Blaschke T., Kramer K.D., Gross M.: Parelektrische Spektroskopie zur nichtinvasiven Diagnostik von Larynxgewebe. *Biomed Technik* 2002; 47: 70-75
- Mao M.Q., Feingold K.R., Elias P.M.: Exogenous lipids influence permeability barrier recovery in aceton-treated murine skin. *Arch Dermatol* 1993; 129: 728-738
- Mao M.Q., Feingold K.R., Thronfeldt C.R., Elias P.M.: Optimisation of physiological lipid mixtures for barrier repair. *J Invest Dermatol* 1996; 106: 1096-1101
- Masini V., Bonte F., Meybeck A., Wepierre J.: Cutaneous bioavailability in hairless rats of tretinoin in liposomes or gel. *J Pharm Sci* 1993; 82: 17-21
- McMichael A.J., Griffiths C.E., Talwar H.S., Finkel L.J., Rafal E.S., Hamilton T.A.: Concurrent application of tretinoin (retinoic acid) partially protects against corticosteroid-induced epidermal atrophy. *Br J Dermatol* 1996; 135: 60-64
- Mehnert W., Mäder K.: Solid lipid nanoparticles production, characterization and applications. *Adv Drug Deliv Rev* 2001; 47: 165-196
- Meybeck A., in: Braun-Falco O., Korting H.C., Maibach H.I. (Eds.), *Liposome Dermatitis*, Springer-Verlag, Berlin 1992; 235-241
- Mezei M., Gulasekharan V.: Liposomes: a selective drug delivery system for the topical route of administration: gel dosage form. *J Pharm Pharmacol* 1982; 34: 473-474
- Miescher S.M., Vogel M.: Molecular aspects of allergy. *Mol Aspects Med* 2002; 23: 413-462
- Montenegro L., Ademola J.I., Bonina F.P., Maibach H.I.: Effect of application time of betamethasone 17-valerate 0.1% cream on skin blanching and stratum corneum drug concentration. *Int J Pharm* 1996; 140: 51-60
- Müller B.W.: Penetrationsförderer und Arzneistoffträgersysteme. In: *Therapeutische Verfahren in der Dermatologie: Dermatika und Kosmetika*. Korting H.C., Sterry, Blackwell, Berlin 2001
- Müller R.H., Luchs J.S.: Arzneistoffträger aus festen Lipidteilchen, Feste Lipidnanosphären (SLN). European Patent No. 0605497, 1996

- Müller R.H., Rühl D., Runge S., Schulze-Forster K., Mehnert W.: Cytotoxicity of solid lipid nanoparticles as a function of the lipid matrix and the surfactant. *Pharm Res* 1997; 14: 458-462
- Müller R.H., Radtke M., Wissing S.A.: Nanosturctured lipid matrices for improved microencapsulation of drugs. *Int J Pharm* 2002; 242: 121-128
- Müller R.H., Mäder K., Gohla S.: Solid lipid nanoparticles (SLN) for controlled drug delivery – a review of the state of the art. *Euro J Pharm and Biopharm* 2000; 50: 161-177
- Münster U., Nakamura C., Haberland A., Jores K., Mehnert W., Rummel S., Schaller M., Korting H.C., Zouboulis Ch.C., Blume-Peytavi U., Schäfer-Korting M.: RU 58841-myristat – a prodrug for acne and androgenetic alopecia. *Pharmazie* (im Druck)
- Nakazawa M., Sugi N., Kawaguchi H., Ishii N., Nakajima H., Minami M.: Predominance of type 2 cytokine-producing CD4 and CD8 cells in patients with atopic dermatitis. *J All Clin Immunol* 1997; 99: 673-682
- Neubert R.H.H., Schmalfuß U., Huschka C., Wohlrab W.A.: Neuere Entwicklung auf dem Gebiet der dermalen Wirkstoffapplikation. *Pharm Ind* 1998;60: 149-156
- Niedner R.: Grundlagen einer rationalen Therapie mit externen Glukokortikosteroiden. *Hautarzt* 1991; 5: 337-346
- Niedner R., Ziegenmeyer J. et al.: Dermatika Therapeutischer Einsatz, Pharmakologie und Pharmazie. 1992 Wissenschaftliche Verlagsgesellschaft mbH, Stuttgart
- Nokhodchi A., Shokri J., Dashbolaghi A., Hassan-Zadeh D., Ghafourian T., Barzegar-Jalali M.: The enhancement effect of surfactants on the penetration of lorazepam through rat skin. *Int J Pharm* 2003; 250: 359-369
- Olivry T., Candae A.S.: The ACVD task force on canine atopic dermatitis: glucocorticoid pharmacotherapy. *Vet Immunol Immunopathol* 2001; 81: 317-322
- Paige D.G., Morse-Fischer N., Harper J.I.: Quantification of stratum corneum ceramides and lipid envelope ceramides in the hereditary ichthyoses. *Br J Dermatol* 1994; 131: 23-27
- Panchagnula R., Ritschel W.A.: Development and evaluation of an intracutaneous depot formulation of corticosteroids using transcutol as a cosolvent: In-vitro, ex-vivo and in-vivo rat studies. *J Pharm Pharmacol* 1991; 43: 609-614
- Paolino D., Ventura C.A., Nistico S., Puglisi G., Fresta M.: Lecithin microemulsions for the topical administration of ketoprofen: percutaneous adsorption through human skin and in vivo human skin tolerability. *Int J Pharm* 2002; 244: 21-31
- Pershing L.K., Silver B.S., Krueger G.G.: Feasibility of measuring the bioavailability of topical betamethasone dipropionate in commercial formulations using drug content in skin and a skin blanching bioassay. *Pharmacol Res* 1992; 9: 45-51
- Passoth P.R.: Das Auftreten einer Neurodermitisähnlichen Dermatitis bei Kindern nach Herztransplantation im ersten Lebensjahr unter Cyclosporin A. Inaugural-Dissertation, Gießen 2001
- Patri A.K., Majoros I.J.: Baker J.R., Dendritic polymer macromolecular carriers for drug delivery. *Curr Opin Chem Bio* 2002; 6: 466-471
- Potts R.O., Guy R.H.: Predicting skin permeability. *Pharm Res* 1992; 9: 663-669

Literatuverzeichnis

- Punnonen J., de Waal Malefyt R., van Vlasselaer P., Gauchat J.F., de Vries J.E.: IL-10 and viral IL-10 prevent IL-4-induced IgE synthesis by inhibiting the accessory cell function of monocytes. *J Immunol* 1993; 151: 1280-1289
- Radtke M.: Nanostructured lipid carriers (NLC): Untersuchungen zur Struktur, Wirkstoffinkorporation und Stabilität. Dissertation Freie Universität Berlin, 2002
- Santos Maia C.S., Mehnert W., Schäfer-Korting M.: Solid lipid nanoparticles as drug carriers for topical glucocorticoids. *Int J Pharm* 2000; 196: 165-167
- Santos Maia C.F.: Verbesserung der topischen Glucocorticoidtherapie: Prüfung von neuen Wirkstoffen und SLN-Präparationen. Dissertation Freie Universität Berlin, 2002
- Santos Maia C., Mehnert W., Schaller M., Korting H.C., Gysler A., Haberland A., Schäfer-Korting M.: Drug targeting by solid lipid nanoparticles for dermal use. *J Drug Target* 2002; 10: 489-495
- Schackert C., Korting H.C., Schäfer-Korting M.: Qualitative and quantitative assessment of the benefit-risk ratio of medium potency topical corticosteroids in vitro and in vivo characterisation of drugs with an increased benefit-risk ratio. *Bio Drugs* 2000; 13: 267-277
- Schäfer-Korting M., Korting H.C.: Prednicarbate activity and benefit/risk ratio in relation to other topical glucocorticoids. *Clin Pharmacol Ther* 1993; 54: 448-456
- Schäfer-Korting M., Korting H.C., Ponce-Pöschl E.: Liposomal tretinoin for uncomplicated acne vulgaris. *Clin Investig* 1994; 72: 1086-1091
- Schmalfuß U., Neubert R., Wohlrab W.: Modification of drug penetration into human skin using microemulsions. *J Control Release* 1997; 46: 279-285
- Schwarz C., Mehnert W.: Solid lipid nanoparticles (SLN) for controlled drug delivery II. Drug incorporation and physicochemical characterization. *J Microencapsul* 1999; 16: 205-213
- Sintov A., Shapiro L.: New microemulsion vehicle facilitates percutaneous penetration in vitro and cutaneous drug bioavailability in vivo. *J Control Release* 2004; 95: 173-183
- Sivaramakrishnan R.: Density and mobility of permanent electric dipole moments – parelectric spectroscopy. Master thesis Humboldt Universität Berlin, 2003
- Sivaramakrishnan R., Nakamura C., Mehnert W., Korting H.C., Kramer K.D., Schäfer-Korting M.: Glucocorticoid entrapment into lipid carriers – characterisation by parelectric spectroscopy and influence on dermal uptake. *J Control Release* 2004; 97: 493-502
- Spiclin P., Homar M., Zupancic-Valant A., Gasperlin M.: Sodium ascorbyl phosphate in topical microemulsions. *Int J Pharm* 2003; 256: 65-73
- Spika I., Hammer S., Kleuser B., Korting H.C., Schäfer-Korting M.: Transcriptional activity of potent Glucocorticoids: relevance of glucocorticoid receptor isoforms and drug metabolites. *Skin Pharm Appl Skin Physiol* 2003; 16: 143-150
- Suhonen T.M., Bouwstra J.A., Urtti A.: Chemical enhancement of percutaneous absorption in relation to stratum corneum structural alterations. *J Control Release* 1999; 59: 149-161
- Trautmann A., Akidis M., Bröcker E.B., Blaser K., Akidis C.A.: New insights into the role of T cells in atopic dermatitis and allergic contact dermatitis. *Trends Immunol* 2001; 22: 530-532
- van de Sandt J.J.M., Meuling W.J.A., Elliott G.R., Cnubben N.H.P., Hakkert B.C.: Comparative in vitro-in vivo percutaneous absorption of pesticide propoxur. *Toxicol Sci* 2000; 58: 15-22

- van den Bergh B.A.I., Wertz P.W., Junginger H.E., Bouwstra J.A.: Elasticity of vesicles assessed by electron spin resonance, electron microscopy and extrusion measurements. Int J Pharm 2001; 217: 13-24
- Verma D.D., Verma S., Blume G., Fahr A.: Liposomes increase skin penetration of entrapped and non-entrapped hydrophilic substances into human skin: a skin penetration and confocal laser scanning microscopy study. Euro J Pharm Biopharm 2003; 55: 271-277
- Wagner H., Kostka K.H., Lehr C.M., Schaefer U.F.: pH profiles in human skin: influence of two in vitro test systems for drug delivery testing. Euro J Pharma Biopharma 2003; 55: 57-65
- Wang Z., Itoh Y., Hosaka Y., Kobayashi I., Nakano Y., Maeda I., Umeda F., Yamakawa J., Kawase M., Yagi K.: Novel transdermal drug delivery system with polyhydroxyalkoate and starburst polyamidoamine dendrimer. J Biosci Bioeng 2003; 95: 541-543
- Wertz P.W., Downing D.T.: Stratum corneum: biological and biochemical considerations, in Hadgraft J., Guy R.H. (Hsg.), Transdermal drug delivery: Developmental issues and research initiatives, Marcel Dekker, New York, 1989; 1-22
- Westesen K., Bunjes H., Koch M.H.J.: Physicochemical characterization of lipid nanoparticles and evaluation of their drug loading capacity and sustained release potential. J Control Release 1997; 48: 223-236 A
- Westesen K., Siekmann B.: Investigation of the gel formation of phospholipid-stabilized solid lipid nanoparticles. Int J Pharm 1997; 151: 35-45 B
- Weyhers H., Ehlers S., Mehnert W., Hahn H., Müller R.H.: Solid lipid nanoparticles – determination of in vivo toxicity. Proc. 1st World Meeting APGI/APV 1995: 489-490
- Williams A.C., Barry B.W.: Penetration enhancers. Adv Drug Deliv Rev 2004; 56: 603-618
- Wissing S.A., Müller R.H.: The influence of solid lipid nanoparticles on skin hydration and viscoelasticity – in vivo study. Euro J Pharm Biopharm 2003; 56: 67-72
- Wohlrab W., Lasch J., Taube K.M., Wozniak K.D.: Hautpermeation von liposomal inkorporiertem Hydrocortison. Pharmazie 1989; 44: 333-335
- Zimmermann E., Müller R.H.: Electrolyte- and pH-stabilities of aqueous solid lipidnanoparticle(SLN™) dispersions in artificial gastrointestinal media. Euro J Pharm Biopharm 2001; 52: 203-210
- zur Mühlen A., Mehnert W.: Drug release and release mechanism of prednisolone loaded solid lipid nanoparticles. Pharmazie 1998; 53: 552-555
- zur Mühlen A.: Feste Lipid Nanopartikel mit prolongierter Wirkstoffliberation Herstellung, Langzeitstabilität, Charakterisierung, Freisetzungsvorhalten und -Mechanismen. Dissertation, Freie Universität Berlin 1996