

7 Literatur

1. Aqueskirchner,J.D., Bernau,A., Burkart,A.C., Imhoff,A.B. Knieinstabilität beim Varusmorphotyp - Kreuzbandplastik und Korrekturosteotomie als Kombinationseingriff. Z. Orthop. 140, 185-193 (2002).
2. Arnold,U., Lindenayn,K., Perka,C. In vitro-cultivation of human periosteum derived cells in bioresorbable polymer-TCP-composites. Biomaterials 23, 2303-2310 (2002).
3. Aruffo,A., Stamenkovic,I., Melnick,M., Underhill,C.B., Seed,B. CD44 is the principal cell surface receptor for hyaluronate. Cell 61, 1303-1313 (1990).
4. Bayliss,M.T., Ridgway,G.D., Ali,S.Y. Differences in the rates of aggregation of proteoglycans from human articular cartilage and chondrosarcoma. Biochem. J. 215, 705-708 (1983).
5. Below,S., Arnoczky,S.P., Dodds,J., Kooima,C., Walter,N. The split-line pattern of the distal femur: A consideration in the orientation of autologous cartilage grafts. Arthroscopy 18, 613-617 (2002).
6. Bentley,G., Greer,R.B., III. Homotransplantation of isolated epiphyseal and articular cartilage chondrocytes into joint surfaces of rabbits. Nature 230, 385-388 (1971).
7. Benya,P.D., Padilla,S.R., Nimni,M.E. The progeny of rabbit articular chondrocytes synthesize collagen types I and III and type I trimer, but not type II. Verifications by cyanogen bromide peptide analysis. Biochemistry 16, 865-872 (1977).
8. Boissier,M.C., Chiocchia,G., Ronziere,M.C., Herbage,D., Fournier,C. Arthritogenicity of minor cartilage collagens (types IX and XI) in mice. Arthritis Rheum. 33, 1-8 (1990).
9. Borrill,J., Funk,L., Deakin,S. Orthoteers Orthopaedic Education. <http://www.orthoteers.co.uk/Nrujp~ij33lm/Orthartcart.htm#Zones> (2003).
10. Britt,J.C., Park,S.S. Autogenous tissue-engineered cartilage: evaluation as an implant material. Arch. Otolaryngol. Head Neck Surg. 124, 671-677 (1998).
11. Brittberg,M., Lindahl,A., Nilsson,A., Ohlsson,C., Isaksson,O., Peterson,L. Treatment of deep cartilage defects in the knee with autologous chondrocyte transplantation. N. Engl. J. Med. 331, 889-895 (1994).
12. Brittberg,M., Tallheden,T., Sjogren-Jansson,B., Lindahl,A., Peterson,L. Autologous chondrocytes used for articular cartilage repair: an update. Clin. Orthop. 1(391), 337-348 (2001).
13. Brown WE, Chow LC. Singular points in the chemistry of teeth. J Dent Res 54,

74 (1975).

14. Brown,W.E., Chow,L.C. Dental restorative cement pastes. U. S. Patent No. 4518430 (1985).
15. Bujia,J., Alsalameh,S., Naumann,A., Wilmes,E., Sitterger,M., Burmester,G.R. Humoral immune response against minor collagens type IX and XI in patients with cartilage graft resorption after reconstructive surgery. Ann. Rheum. Dis. 53, 229-234 (1994).
16. Claes L, Becker C, Simnacher M, Hoellen I. Die Verbesserung der Primärstabilität von DHS-Osteosynthesen bei instabilen peritrochantären Femurfrakturen osteoporotischer Knochen durch einen neuen Glaslonomer Zement. Unfallchirurg 98, 118-123 (1995).
17. Constantz,B.R., Barr,B.M., Ison,I.C., Fulmer,M.T., Baker,J., McKinney,L., Goodman,S.B., Gunasekaren,S., Delaney,D.C., Ross,J., Poser,R.D. Histological, chemical, and crystallographic analysis of four calcium phosphate cements in different rabbit osseous sites. J. Biomed. Mater. Res. 43, 451-461 (1998).
18. Constantz,B.R., Iscon I.C. Conversion of brushite bone cement to hydroxyapatite in rabbit femoral defects. Duo Transactions, Fourth World Biomaterial Congress, International Liaison Committee, 56 (1992).
19. Constantz,B.R., Ison,I.C., Fulmer,M.T., Poser,R.D., Smith,S.T., VanWagoner,M., Ross,J., Goldstein,S.A., Jupiter,J.B., Rosenthal,D.I. Skeletal repair by in situ formation of the mineral phase of bone. Science 267, 1796-1799 (1995).
20. Czitrom,A.A., Langer,F., McKee,N., Gross,A.E. Bone and cartilage allotransplantation. A review of 14 years of research and clinical studies. Clin. Orthop. 141-145 (1986).
21. Davisson,T., Sah,R.L., Ratcliffe,A. Perfusion increases cell content and matrix synthesis in chondrocyte three-dimensional cultures. Tissue Eng 8, 807-816 (2002).
22. Dessau,W., Sasse,J., Timpl,R., Jilek,F., Mark,v.d.K. Synthesis and extracellular deposition of fibronectin in chondrocyte cultures. Response to the removal of extracellular cartilage matrix. J. Cell Biol. 79, 342-355 (1978).
23. Dessau,W., von der Mark,H., von der Mark,K., Fischer,S. Changes in the patterns of collagens and fibronectin during limb-bud chondrogenesis. J. Embryol. Exp. Morphol. 57, 51-60 (1980).
24. Driessens,F.C., Planell,J.A., Boltong,M.G., Khairoun,I., Ginebra,M.P. Osteotransductive bone cements. Proc. Inst. Mech. Eng [H.] 212, 427-435 (1998).

25. Driessens,F.C., Planell,J.A., Gil,F.J. Encyclopedic handbook of biomaterials and bioengineering. Dekker, New York 855-877 (1995).
26. Dunham,B.P., Koch,R.J. Basic fibroblast growth factor and insulinlike growth factor I support the growth of human septal chondrocytes in a serum-free environment. Arch. Otolaryngol. Head Neck Surg. 124, 1325-1330 (1998).
27. Elford,P.R., Graeber,M., Ohtsu,H., Aeberhard,M., Legendre,B., Wishart,W.L., MacKenzie,A.R. Induction of swelling, synovial hyperplasia and cartilage proteoglycan loss upon intra-articular injection of transforming growth factor beta-2 in the rabbit. Cytokine 4, 232-238 (1992).
28. Eyre,D.R., Apon,S., Wu,J.J., Ericsson,L.H., Walsh,K.A. Collagen type IX: evidence for covalent linkages to type II collagen in cartilage. FEBS Lett. 220, 337-341 (1987).
29. Freed,L.E., Grande,D.A., Lingbin,Z., Emmanuel,J., Marquis,J.C., Langer,R. Joint resurfacing using allograft chondrocytes and synthetic biodegradable polymer scaffolds. J. Biomed. Mater. Res. 28, 891-899 (1994).
30. Freed,L.E., Marquis,J.C., Nohria,A., Emmanuel,J., Mikos,A.G., Langer,R. Neocartilage formation in vitro and in vivo using cells cultured on synthetic biodegradable polymers. J. Biomed. Mater. Res. 27, 11-23 (1993).
31. Freed,L.E., Vunjak-Novakovic,G., Biron,R.J., Eagles,D.B., Lesnoy,D.C., Barlow,S.K., Langer,R. Biodegradable polymer scaffolds for tissue engineering. Biotechnology (NY) 12, 689-693 (1994).
32. Gerngross,H., Burri,C., Kinzl,L., Merk,J., Muller,G.W. Komplikationen an den Entnahmestellen autologer Spongiosatransplantate. Aktuelle Traumatol. 12, 146-152 (1982).
33. Goldring,M.B., Birkhead,J., Sandell,L.J., Kimura,T., Krane,S.M. Interleukin 1 suppresses expression of cartilage-specific types II and IX collagens and increases types I and III collagens in human chondrocytes. J. Clin. Invest 82, 2026-2037 (1988).
34. Grande,D.A., Halberstadt,C., Naughton,G., Schwartz,R., Manji,R. Evaluation of matrix scaffolds for tissue engineering of articular cartilage grafts. J. Biomed. Mater. Res. 34, 211-220 (1997).
35. Grob,D. Probleme an der Entnahmestelle bei autologer Knochentransplantation. Unfallchirurg 89, 339-345 (1986).
36. Gross,U.M. Quantitative morphology of the implant-bone interface. Von Recum AF,editor. Handbook of Biomaterials Evaluation, Taylor and Francis, Philadelphia 2, 739-742 (1999).
37. Gross,U.M., Strunz,V. Surface staining of sawed sections of undecalcified

- bone containing alloplastic implants. *Stain Technol.* 52, 217-219 (1977).
38. Ham,R.G. Clonal growth of mammalian cells in a chemically defined synthetic medium. *Proc. Natl. Acad. Sd.* 53, 288-293 (1965).
 39. Hangody,L., Kish,G., Karpati,Z., Szerb,I., Udvarhelyi,I. Arthroscopic autogenous osteochondral mosaicplasty for the treatment of femoral condylar articular defects. A preliminary report. *Knee. Surg. Sports Traumatol. Arthrosc.* 5, 262-267 (1997).
 40. Hardingham,T.E., Muir,H., Kwan,M.K., Lai,W.M., Mow,V.C. Viscoelastic properties of proteoglycan solutions with varying proportions present as aggregates. *J. Orthop. Res.* 5, 36-46 (1987).
 41. Hassell,J.R., Pennypacker,J.P., Lewis,C.A. Chondrogenesis and cell proliferation in limb bud cell cultures treated with cytosine arabinoside and vitamin A. *Exp. Cell Res.* 112, 409-417 (1978).
 42. Homminga,G.N., Bulstra,S.K., Bouwmeester,P.S., van der Linden,A.J. Perichondral grafting for cartilage lesions of the knee. *J. Bone Joint Surg.* 72-B, 1003-1007 (1990).
 43. Horas,U., Schnettler,R., Pelinkovic,D., Herr,G., Aigner,T. Knorpelknochentransplantation versus autogene Chondrocytentransplantation. Eine prospektive vergleichende klinische Studie. *Chirurg* 71, 1090-1097 (2000).
 44. Horwitz,A.L., Dorfman,A. The growth of cartilage cells in soft agar and liquid suspension. *J. Cell Biol.* 45, 434-438 (1970).
 45. Huang,Q., Goh,J.C., Hutmacher,D.W., Lee,E.H. In Vivo Mesenchymal Cell Recruitment by a Scaffold Loaded with Transforming Growth Factor beta1 and the Potential for in Situ Chondrogenesis. *Tissue Eng* 8, 469-482 (2002).
 46. Hunziker,E.B., Quinn,T.M., Hauselmann,H. Quantitative structural organization of normal adult human articular cartilage. *Osteoarthritis. Cartilage.* 10, 564-572 (2002).
 47. Hurtig,M.B., Fretz,P.B., Doige,C.E., Schnurr,D.L. Effects of lesion size and location on equine articular cartilage repair. *Can. J. Vet. Res.* 52, 137-146 (1988).
 48. Imhof,H., Breitenseher,M., Kainberger,F., Rand,T., Trattnig,S. Importance of subchondral bone to articular cartilage in health and disease. *Top. Magn Reson. Imaging* 10, 180-192 (1999).
 49. Jeffery,A.K., Blunn,G.W., Archer,C.W., Bentley,G. Three-dimensional collagen architecture in bovine articular cartilage. *J. Bone Joint Surg.* 73-B, 795-801 (1991).

50. Junqueira L.C., Carneiro J. Histologie. Springer, Berlin 153-155 (1991).
51. Kato,Y., Gospodarowicz,D. Effect of exogenous extracellular matrices on proteoglycan synthesis by cultured rabbit costal chondrocytes. *J. Cell Biol.* 100, 486-495 (1985).
52. Kim,H.K., Moran,M.E., Salter,R.B. The potential for regeneration of articular cartilage in defects created by chondral shaving and subchondral abrasion. An experimental investigation in rabbits. *J. Bone Joint Surg.* 73-A, 1301-1315 (1991).
53. Kimura,T., Yasui,N., Ohsawa,S., Ono,K. Chondrocytes embedded in collagen gels maintain cartilage phenotype during long-term cultures. *Clin. Orthop.* 231-239 (1984).
54. Kirsch,T., von der Mark,K. Ca²⁺ binding properties of type X collagen. *FEBS Lett.* 294, 149-152 (1991).
55. Kofmann S. Gips als Plombenmaterial. *Zentralblatt der Chirurgie* 33, 1817-1818 (1925).
56. Kreklau,B., Sittinger,M., Mensing,M.B., Voigt,C., Berger,G., Burmester,G.R., Rahmazadeh,R., Gross,U. Tissue engineering of biphasic joint cartilage transplants. *Biomaterials* 20, 1743-1749 (1999).
57. Kurashina,K., Kurita,H., Kotani,A., Takeuchi,H., Hirano,M. In vivo study of a calcium phosphate cement consisting of alpha-tricalcium phosphate/dicalcium phosphate dibasic/tetracalcium phosphate monoxide. *Biomaterials* 18, 147-151 (1997).
58. Kwan,A.P., Freemont,A.J., Grant,M.E. Immunoperoxidase localization of type X collagen in chick tibiae. *Biosci. Rep.* 6, 155-162 (1986).
59. Lemaitre J, Mirtchi A, Mortier A. Calcium phosphate cements for medical use. *Ceram Sci Technol* 52, 141-146 (1987).
60. Lewis,L. A Compelling Need. *The Scientist* 9, 12 (1995).
61. Lindahl,U., Hook,M. Glycosaminoglycans and their binding to biological macromolecules. *Annu. Rev. Biochem.* 47, 385-417 (1978).
62. Lippiello,L., Chakkalakal,D., Connolly,J.F. Pulsing direct current-induced repair of articular cartilage in rabbit osteochondral defects. *J. Orthop. Res.* 8, 266-275 (1990).
63. Mainil-Varlet,P., Rieser,F., Grogan,S., Mueller,W., Saager,C., Jakob,R.P. Articular cartilage repair using a tissue-engineered cartilage-like implant: an animal study. *Osteoarthritis Cartilage.* 9 Suppl A, 6-15 (2001).

64. Marijnissen,W.J., van Osch,G.J., Aigner,J., van der Veen,S.W., Hollander,A.P., Verwoerd-Verhoef,H.L., Verhaar,J.A. Alginate as a chondrocyte-delivery substance in combination with a non-woven scaffold for cartilage tissue engineering. *Biomaterials* 23, 1511-1517 (2002).
65. Marks,R., Allegrante,J.P. Body mass indices in patients with disabling hip osteoarthritis. *Arthritis Res.* 4, 112-116 (2002).
66. Mendler,M., Eich-Bender,S.G., Vaughan,L., Winterhalter,K.H., Bruckner,P. Cartilage contains mixed fibrils of collagen types II, IX, and XI. *J. Cell Biol.* 108, 191-197 (1989).
67. Minuth,W.W., Stockl,G., Kloth,S., Dermietzel,R. Construction of an apparatus for perfusion cell cultures which enables in vitro experiments under organotypic conditions. *Eur. J. Cell Biol.* 57, 132-137 (1992).
68. Miyamoto,S., Takaoka,K., Okada,T., Yoshikawa,H., Hashimoto,J., Suzuki,S., Ono,K. Evaluation of polylactic acid homopolymers as carriers for bone morphogenetic protein. *Clin. Orthop.* 274-285 (1992).
69. Miyamoto,Y., Ishikawa,K., Takechi,M., Toh,T., Yuasa,T., Nagayama,M., Suzuki,K. Histological and compositional evaluations of three types of calcium phosphate cements when implanted in subcutaneous tissue immediately after mixing. *J. Biomed. Mater. Res.* 48, 36-42 (1999).
70. Miyamoto,Y., Ishikawa,K., Takechi,M., Yuasa,M., Kon,M., Nagayama,M., Asaoka,K. Non-decay type fast-setting calcium phosphate cement: setting behaviour in calf serum and its tissue response. *Biomaterials* 17, 1429-1435 (1996).
71. Muir,H. *Biochemistry*. Pitman, London (1979).
72. Müller ME. Die Verwendung von Kunsthärtzen in der Knochenchirurgie. *Unfall-Chirurgie* 64, 513-522 (1962).
73. Naumann,A., Dennis,J., Staudenmaier,R., Rotter,N., Aigner,J., Ziegelaar,B., Happ,T., Rasp,G., Caplan,A.I. Adulte mesenchymale Stammzellen - neue Möglichkeiten der Gewebezüchtung für die plastisch-rekonstruktive Chirurgie. *Laryngorhinootologie* 81, 521-527 (2002).
74. Neame,P.J., Barry,F.P. The link proteins. *EXS* 70, 53-72 (1994).
75. Nerlich,A.G., Pöschl,E., Voss,T., Müller,P.K. Biosynthesis of collagen and its control. *Rheumatology*, Karger, Basel 10, 70-90 (1986).
76. Noth,U., Tuli,R., Osyczka,A.M., Danielson,K.G., Tuan,R.S. In vitro engineered cartilage constructs produced by press-coating biodegradable polymer with human mesenchymal stem cells. *Tissue Eng* 8, 131-144 (2002).

77. O'Driscoll,S.W., Fitzsimmons,J.S. The role of periosteum in cartilage repair. Clin. Orthop. 1(391), 190-207 (2001).
78. O'Driscoll,S.W., Keeley,F.W., Salter,R.B. The chondrogenic potential of free autogenous periosteal grafts for biological resurfacing of major full-thickness defects in joint surfaces under the influence of continuous passive motion. An experimental investigation in the rabbit. J. Bone Joint Surg. 68-A, 1017-1035 (1986).
79. Pacifici,M., Golden,E.B., Oshima,O., Shapiro,I.M., Leboy,P.S., Adams,S.L. Hypertrophic chondrocytes. The terminal stage of differentiation in the chondrogenic cell lineage? Ann. N. Y. Acad. Sci. 599, 45-57 (1990).
80. Passaretti,D., Silverman,R.P., Huang,W., Kirchhoff,C.H., Ashiku,S., Randolph,M.A., Yaremchuk,M.J. Cultured chondrocytes produce injectable tissue-engineered cartilage in hydrogel polymer. Tissue Eng 7, 805-815 (2001).
81. Perka,C., Schultz,O., Sittiger,M., Zippel,H. [Chondrocyte transplantation in PGLA/polydioxanone fleece]. Orthopade 29, 112-119 (2000).
82. Perka,C., Sittiger,M., Schultz,O., Spitzer,R.S., Schlenzka,D., Burmester,G.R. Tissue engineered cartilage repair using cryopreserved and noncryopreserved chondrocytes. Clin. Orthop. 245-254 (2000).
83. Pschyrembel. Klinisches Wörterbuch. de Gruyter, Berlin 259., 870 (2002).
84. Puelacher,W.C., Kim,S.W., Vacanti,J.P., Schloo,B., Mooney,D., Vacanti,C.A. Tissue-engineered growth of cartilage: the effect of varying the concentration of chondrocytes seeded onto synthetic polymer matrices. Int. J. Oral Maxillofac. Surg. 23, 49-53 (1994).
85. Reed,S.C., Jackson,R.W., Glossop,N., Randle,J. An in vivo study of the effect of excimer laser irradiation on degenerate rabbit articular cartilage. Arthroscopy 10, 78-84 (1994).
86. Ringe,J., Kaps,C., Schmitt,B., Buscher,K., Bartel,J., Smolian,H., Schultz,O., Burmester,G.R., Haupl,T., Sittiger,M. Porcine mesenchymal stem cells. Induction of distinct mesenchymal cell lineages. Cell Tissue Res. 307, 321-327 (2002).
87. Rotter,N., Aigner,J., Naumann,A., Planck,H., Hammer,C., Burmester,G., Sittiger,M. Cartilage reconstruction in head and neck surgery: comparison of resorbable polymer scaffolds for tissue engineering of human septal cartilage. J. Biomed. Mater. Res. 42, 347-356 (1998).
88. Schelling,K., Heisel,C., Schnurer,S.M., Mau,H., Breusch,S.J. Neue PMMA-Knochenzemente zur Anwendung in Vakuummischesystemen. Orthopade 31, 556-562 (2002).

89. Schmid,T.M., Linsenmayer,T.F. Immunohistochemical localization of short chain cartilage collagen (type X) in avian tissues. *J. Cell Biol.* 100, 598-605 (1985).
90. Shinar,H., Seo,Y., Ikoma,K., Kusaka,Y., Eliav,U., Navon,G. Mapping the fiber orientation in articular cartilage at rest and under pressure studied by 2H double quantum filtered MRI. *Magn Reson. Med.* 48, 322-330 (2002).
91. Siebert,C.H., Miltner,O., Schneider,U., Wahner,T., Koch,S., Niedhart,C. Einheilungsverhalten von osteochondralen Transplantaten - Tierexperimentelle Untersuchungen an einem Schafmodell. *Z. Orthop.* 139, 382-386 (2001).
92. Sittinger,M. In vitro Herstellung von vitalem Knorpelgewebe mit Hilfe resorbierbarer Polymere. Dissertation zur Erlangung des Doktorgrades der Naturwissenschaften der Universität Regensburg. 85ff., 96f. (1994).
93. Sittinger,M., Perka,C., Schultz,O., Haupl,T., Burmester,G.R. Joint cartilage regeneration by tissue engineering. *Z. Rheumatol.* 58, 130-135 (1999).
94. Smith,R.L., Rusk,S.F., Ellison,B.E., Wessells,P., Tsuchiya,K., Carter,D.R., Caler,W.E., Sandell,L.J., Schurman,D.J. In vitro stimulation of articular chondrocyte mRNA and extracellular matrix synthesis by hydrostatic pressure. *J. Orthop. Res.* 14, 53-60 (1996).
95. Stachow. Versuche über Knochenplombierung bei Höhlenförmigen Defekten des Knochens. *Beiträge zur Klin Chir XII.2*, 389-408 (1893).
96. Toole B.P. *Neuronal Recognition*. Plenum, New York (1976).
97. Tsai,P.P., Pachowsky,U., Stelzer,H.D., Hackbarth,H. Impact of environmental enrichment in mice. 1: effect of housing conditions on body weight, organ weights and haematology in different strains. *Lab Anim* 36, 411-419 (2002).
98. Vacanti,J.P., Morse,M.A., Saltzman,W.M., Domb,A.J., Perez-Atayde,A., Langer,R. Selective cell transplantation using bioabsorbable artificial polymers as matrices. *J. Pediatr. Surg.* 23, 3-9 (1988).
99. van Beuningen,H.M., van der Kraan,P.M., Arntz,O.J., van den Berg,W.B. Transforming growth factor-beta 1 stimulates articular chondrocyte proteoglycan synthesis and induces osteophyte formation in the murine knee joint. *Lab Invest* 71, 279-290 (1994).
100. Velikonja,N.K., Wozniak,G., Malicev,E., Knezevic,M., Jeras,M. Protein synthesis of human articular chondrocytes cultured in vitro for autologous transplantation. *Pflugers Arch.* 442, 169-170 (2001).
101. von der,M.K., Gauss,V., von der,M.H., Muller,P. Relationship between cell shape and type of collagen synthesised as chondrocytes lose their cartilage

- phenotype in culture. *Nature* 267, 531-532 (1977).
102. Wakitani,S., Kimura,T., Hirooka,A., Ochi,T., Yoneda,M., Yasui,N., Owaki,H., Ono,K. Repair of rabbit articular surfaces with allograft chondrocytes embedded in collagen gel. *J. Bone Joint Surg.* 71-B, 74-80 (1989).
 103. Wakitani,S., Yamamoto,T. Response of the donor and recipient cells in mesenchymal cell transplantation to cartilage defect. *Microsc. Res. Tech.* 58, 14-18 (2002).
 104. Welch,R.D., Berry,B.H., Crawford,K., Zhang,H., Zobitz,M., Bronson,D., Krishnan,S. Subchondral defects in caprine femora augmented with in situ setting hydroxyapatite cement, polymethylmethacrylate, or autogenous bone graft: biomechanical and histomorphological analysis after two-years. *J. Orthop. Res.* 20, 464-472 (2002).
 105. West,C.M., Lanza,R., Rosenblum,J., Lowe,M., Holtzer,H., Avdalovic,N. Fibronectin alters the phenotypic properties of cultured chick embryo chondroblasts. *Cell* 17, 491-501 (1979).
 106. Yaeger,P.C., Masi,T.L., de Ortiz,J.L., Binette,F., Tubo,R., McPherson,J.M. Synergistic action of transforming growth factor-beta and insulin-like growth factor-I induces expression of type II collagen and aggrecan genes in adult human articular chondrocytes. *Exp. Cell Res.* 237, 318-325 (1997).
 107. Zaucke,F., Dinser,R., Maurer,P., Paulsson,M. Cartilage oligomeric matrix protein (COMP) and collagen IX are sensitive markers for the differentiation state of articular primary chondrocytes. *Biochem. J.* 358, 17-24 (2001).