

## 6 Literaturverzeichnis

- Adams, J.C. and Watt, F.M.: Regulation of development and differentiation by the extracellular matrix. *Development* **117** (1993), 1183-1198.
- Arumugham, R.G., Hsieh, T.C.Y., Tanzer, M.L. and Laine, R.A.: Strutures of the asparagine-linked sugar chains of laminin. *Biochem. Biophys. Act.* **833** (1986), 122-126.
- Aumailley, M., Battaglia, C., Mayer, U., Reinhardt, D., Nischt, R., Timpl, R. and Fox, J.W.: Nidogen mediates the formation of the ternary complexes of basement membrane components. *Kidney Intern.* **43** (1993), 7-12.
- Aumailley, M., Gimond, C. and Rousselle, P.: Integrin-mediated cellular interactions with laminins. In Ekblom, P. and Timpl, R. (eds), *The Laminins* (1996). Harwood Academic Publisher, Reading, pp. 127-158.
- Aumailley, M., Wiedemann, H., Mann, K. and Timpl, R.: Binding of nidogen and the laminin-nidogen complex to basement membrane collagen type IV, *Eur. J. Biochem.* **184** (1989), 241-248.
- Battaglia, C., Mayer, U., Aumailley, M. and Timpl, R.: Basement membrane heparan sulfate proteoglycan binds to laminin by its heparan sulfate chains and to nidogen by sites in the protein core. *Eur. J. Biochem.* **208** (1992), 359-366.
- Beck, K., Hunter, I. and Engel, J.: Structure and function of laminin: anatomy of a multidomain glycoprotein. *FASEB J.* **4** (1990), 148-160.
- Bork, P., Downing, A.K., Kieffer, B. and Campbell, I.D.: Structure and distribution of modules in extracellular proteins. *Quart. Rev. Biophys.* **29** (1996), 119-167.
- Bozic, D., Engel, J. and Brancaccio, A.: Sequence analysis suggests the presence of an IG-like domain in the N-terminal region of  $\alpha$ -dystroglycan which was crystallized after mutation of a protease-susceptible site (Arg<sup>168</sup>-His), *Matrix Biol.* **17** (1998), 495-500.
- Brancaccio, A., Schulthess, T., Gesemann, M. and Engel, J.: Electron microscopic evidence for a mucin-like region in chick muscle  $\alpha$ -dystroglycan. *FEBS Lett.* **368** (1995), 139-142.
- Brancaccio, A., Schulthess, T., Gesemann, M. and Engel, J.: The N-terminal region of  $\alpha$ -dystroglycan is an autonomous globular domain. *Eur. J. Biochem.* **246** (1997), 166-172.
- Brown, J.C. and Timpl, R: The collagen superfamily. *Int. Arch. Allergy Immunol.* **107** (1995), 484-490.

Brown, J.C., Sasaki, T., Göhring, W., Yamada, Y. and Timpl, R.: The C-terminal domain V of perlecan promotes  $\beta 1$  integrin-mediated cell adhesion, binds heparin, nidogen and fibulin-2 and can be modified by glycosaminoglycans. *Eur. J. Biochem.* **250** (1997), 39-46.

Burgeson, R.E., Chiquet, M., Deutzmann, R., Ekblom, P., Engel, J., Kleinmann, H., Martin, G.R., Meneguzzi, G., Paulsson, M., Sanes, J., Timpl, R., Tryggvason, K., and Yurchenco, P.D.: A new nomenclature for the laminins. *Matrix Biol.* **14** (1994), 209-211.

Castronovo, V.: Laminin receptors and laminin-binding proteins during tumor invasion and metastasis. *Invas. Metastasis* **13** (1993), 1-30.

Champliaud, M.F., Lunstrum, G.P., Rousselle, P., Nishiyama, T., Keene, D.R. and Burgeson, R.E.: Human amnion contains a novel laminin variant, laminin 7, which like laminin 6, covalently associates with laminin 5 to promote stable epithelial-stromal attachment. *J. Cell Biol.* **132** (1996), 1189-1198.

Chen C. and Okayama, H.: High-efficiency transformation of mammalian cells by plasmid DNA. *Mol. Cell. Biol.* **7** (1987), 2745-2752.

Cheng, Y.-S., Champliaud, M.F., Burgeson, R.E., Marinkovich, M.P. and Yurchenco, P.D.: Self-assembly of laminin isoforms. *J. Biol. Chem.* **272** (1997), 31525-31532.

Chiba, A., Matsumura, K., Yamada, H., Inazu, T., Shimizu, T., Kusunoki, S., Kanazawa, I., Kobata, A. and Endo, T.: Structure of sialylated O-linked oligosaccharides of bovine peripheral nerve  $\alpha$ -dystroglycan. The role of a novel O-mannosyl-type oligosaccharide in the binding of  $\alpha$ -dystroglycan with laminin. *J. Biol. Chem.* **272** (1997), 2156-2162.

Cooper, A.R. and MacQueen, H.A.: Subunits of laminin are differentially synthesized in mouse eggs and early embryos. *Dev. Biol.* **96** (1983), 467-471.

David, G. and Bernfield, M.: The emerging roles of cell surface heparan sulfate proteoglycans. *Matrix Biol.* **17** (1998), 461-463.

Deutzmann, R., Huber, J., Schmetz, K.A., Oberbäumer, I. and Hartl, L.: Structural study of long arm fragments of laminin: evidence for repetitive C-terminal sequences in the A chain, not present in the B chain. *Eur. J. Biochem.* **177** (1988), 35-45.

Dziadek, M. and Timpl, R.: Expression of nidogen and laminin in basement membrane during mouse embryogenesis and in teratocarcinoma cells. *Dev. Biol.* **111** (1985), 372-382.

Dziadek, M.: Role of laminin-nidogen complexes in basement membrane formation during embryonic development, *Experientia* **51** (1995), 901-913.

Edgar, D.: Laminins during neurite growth and nerve regeneration. In Ekblom, P. and Timpl, R. (eds), *The Laminins* (1996). Harwood Academic Publisher, Reading, pp. 251-275.

Ekblom, P., Ekblom, M., Fecker, L., Klein, G., Zhang, H.Y., Kadoya, Y., Chu, M.L., Mayer, U. and Timpl, R.: Role of mesenchymal nidogen for epithelial morphogenesis in vitro. *Development* **120** (1994), 2003-2014.

Ekblom, P.: Receptors for laminins during epithelial morphogenesis. *Cell Biol.* **8** (1996), 700-706.

Engel, J. and Furthmayr, H.: Electron microscopy and other physical methods for the characterisation of extracellular matrix proteins: laminin, fibronectin, collagen IV, collagen VI, and proteoglycans, *Meth. Enzymol.*, **145** (1987), 3-78.

Engel, J., Hunter, I., Schulthess, T., Beck, K., Dixon, T.W. and Parry, D.A.D.: Assembly of laminin isoforms by triple-and double-stranded coiled-coil structures. *Biochem. Soc. Trans.* **19** (1991), 839-843.

Engel, J., Odermatt, E., Engel, A., Madri, J.A., Furthmayr, H., Rohde, H. and Timpl, R.: Shapes, domain organizations and flexibility of laminin and fibronectin, two multifunctional proteins of the extracellular matrix. *J. Mol. Biol.* **150** (1981), 97-120.

Engvall, E.: Laminin variants: Why, where and when? *Kidney Int.* **43** (1993), 2-6.

Ervasti, J.M. and Campbell, K.P.: A role for the dystrophin-glycoprotein complex as a transmembrane linker between laminin and actin. *J. Cell Biol.* **122** (1993), 809-823.

Fraenkel-Conrat, H.: Methods for investigating the essential groups for enzyme activity. *Meth. Enzymol.* **4** (1957), 247-269.

Fujiwara, S., Shinkai, H., Deutzmann, R., Paulsson, M. and Timpl, R.: Structure and distribution of N-linked oligosaccharide chains on various domains of mouse tumour laminin. *Biochem. J.* **252** (1988), 453-461.

Galliano, M.-F., Aberdam, D., Aguzzi, A., Ortonne, J.P. and Meneguzzi, G.: Cloning and complete primary structure of the mouse laminin  $\alpha 3$  chain. Distinct expression pattern of the laminin  $\alpha 3A$  and  $\alpha 3B$  chain isoforms. *J. Biol. Chem.* **270** (1995), 21820-21826.

Gee, S.H., Blacher, R.W., Douville, P.J., Provost, P.R., Yurchenco, P.D. and Carbonetto, S.: Laminin-binding protein 120 from brain is closely related to the dystrophin-associated glycoprotein, dystroglycan, and binds with high affinity to the major heparin binding domain of laminin. *J. Biol. Chem.* **268** (1993), 14972-14980.

Gesemann, M., Brancaccio, A., Schumacher, B. and Rüegg, M.A.: Agrin is a high-affinity binding protein of dystroglycan in non-muscle tissue. *J. Biol. Chem.* **273** (1998), 600-605.

Gesemann, M., Cavalli, V., Denzer, A.J., Brancaccio, A., Schumacher, B. and Rüegg, M.A.: Alternative splicing of agrin alters its binding to heparin, dystroglycan, and the putative agrin receptor. *Neuron* **16** (1996), 755-767.

Graham, F.L., Smiley, J., Russell, W.C. and Nairn, R.: Characteristics of a human cell line transformed by DNA from human adenovirus type 5. *J. Gen. Virol.* **36** (1977), 59-72.

Henry, M.D. and Campbell, K.P.: Dystroglycan: an extracellular matrix receptor linked to the cytoskeleton. *Curr. Opin. Cell Biol.* **8** (1996), 625-631.

Hynes, R.O.: Integrins: versatility, modulation, and signaling in cell adhesion. *Cell* **69** (1992), 11-25.

Iivanainen, A., Sainio, K., Sariola, H. and Tryggvason, K.: Primary structure and expression of a novel human laminin  $\alpha 4$  chain. *FEBS Lett.* **365** (1996), 183-188.

Iivanainen, A., Morita, T., Tryggvason, K.: Molecular cloning and tissue-specific expression of a novel murine laminin  $\gamma 3$  chain. *J. Biol. Chem.* **274** (1999), 14107-14111.

Joseph, D.R. and Baker, M.E.: Sex hormone-binding globulin, androgen-binding protein, and vitamin K-dependent protein S are homologous to laminin A, merosin and Drosophila crumbs protein. *FASEB J.* **6** (1992), 2477-2481.

Kadoya, Y., Salmivirta, K., Talts, J.F., Kadoya, K., Mayer, U., Timpl, R. and Ekblom, P.: Importance of nidogen binding to laminin  $\gamma 1$  for branching epithelial morphogenesis of the submandibular gland. *Development* **124** (1997), 683-691.

Klein, G., Ekblom, M., Fecker, L., Timpl, R. and Ekblom, P.: Differential expression of laminin A and B chains during development of embryonic mouse organs. *Development* **110** (1990), 823-837.

Koch, M., Olson, P.F., Albus, A., Jin, W., Hunter, D.D., Brunken, W.J., Burgeson, R.E. and Champliaud, M.F.: Characterization and expression of the laminin  $\gamma 3$  chain: A novel non-basement membrane-associated, laminin chain. *J. Cell Biol.* **145** (1999), 605-617.

Kohfeldt, E., Maurer, P., Vannahme, C. and Timpl, R.: Properties of the extracellular calcium binding module of the proteoglycan testican. *FEBS Lett.* **414** (1997), 557-561.

Laemmli, U.K.: Cleavage of structural proteins during the assembly of the head of bacteriophage T4, *Nature* **227** (1970), 680-685.

Lander, A.D.: Targeting the glycosaminoglycan-binding sites on proteins. *Chem. Biol.* **1** (1994), 73-78.

Maurer, P. and Engel, J.: Structure of laminins and their chain assembly. In Ekblom, P. and Timpl, R. (eds), *The Laminins* (1996). Harwood Academic Publisher, Reading, pp. 27-50.

Mayer, U. and Timpl, R.: Nidogen: a versatile binding protein of basement membranes, In: P.D. Yurchenco, D. Birk and R.P. Mecham (eds), *Extracellular Matrix Assembly and Structure* (1994), Academic Press, Orlando, Fl., pp. 389-416.

Mayer, U., Nischt, R., Pöschl, E., Mann, K., Fukuda, K., Gerl, M., Yamada, Y. and Timpl, R.: A single EGF-like motif of laminin is responsible for high affinity nidogen binding. *EMBO J.* **12** (1985), 1879-1885.

Mecham, R.P. and Hinek, A.: Non-Integrin laminin receptors. In Ekblom, P. and Timpl, R. (eds), *The Laminins* (1996). Harwood Academic Publisher, Reading, pp. 159-183.

Miner, J.H., Lewis, R.M. and Sanes, J.R.: Molecular cloning of a novel laminin chain,  $\alpha 5$ , and widespread expression in adult mouse tissues. *J. Biol. Chem.* **270** (1995), 28523-28526.

Miner, J.H., Patton, B.L., Lentz, S.I., Gilbert, D.J., Snider, W.D., Jenkins, N.A., Copeland, N.G. and Sanes, J.R.: The laminin  $\alpha$  chains: expression, developmental transitions, and chromosomal locations of  $\alpha 1-5$ , identification of heterotrimeric laminins 8-11 and cloning of a novel  $\alpha 3$  isoforms. *J. Cell Biol.* **137** (1997), 685-701.

Nischt, R., Pottgiesser, J., Krieg, T., Mayer, U., Aumailley, M. and Timpl, R.: Recombinant expression and properties of the human calcium-binding extracellular matrix protein BM-40, *Eur. J. Biochem.* **200** (1991), 529-536.

Noonan, D.M., Fulle, A., Valente, P., Cai, S. Horigan, E., Sasaki, M., Yamada, Y. and Hassell, J.R.: The complete sequence of perlecan, a basement membrane heparan sulfate proteoglycan, reveals extensive similarity with laminin A chain, low density lipoprotein-receptor, and the neural cell adhesion molecule. *J. Biol. Chem.* **266** (1991), 22939-22947.

Olson, S.T., Halvorson, H.R. and Björk, I.: Quantitative characterization of the thrombin-heparin interaction. Discrimination between specific and non-specific binding models. *J. Biol. Chem.* **266** (1991), 6342-6352.

Ott, U., Odermatt, E., Engel, J., Furthmayr, H. and Timpl, R.: Protease resistance and conformation of laminin. *Eur. J. Biochem.* **123** (1982), 63-72.

Pall, E.A., Bolton, K.M. and Ervasti, J.M.: Differential heparin inhibition of skeletal muscle  $\alpha$ -dystroglycan binding to laminins. *J. Biol. Chem.* **271** (1996), 3817-3821.

Pan, T.C., Kluge, M., Zhang, R.Z., Mayer, U., Timpl, R. and Chu, M.L.: Sequence of extracellular mouse protein BM-90/fibulin and its calcium-dependent binding to other basement membrane ligands. *Eur. J. Biochem.* **215** (1993), 733-740.

Patthy, L. and Nikolics, K.: Functions of agrins and agrin-related proteins. *Trends Neurosci.* **16** (1993), 76-81.

Patthy, L.: A family of laminin-related proteins controlling ectodermal differentiation in drosophila. *FEBS Lett.* **298** (1992), 182-184.

Paulsson, M., Aumailley, M., Deutzmann, R., Timpl, R., Beck, K. and Engel, J.: Laminin-nidogen complex: extraction with chelating agents and structural characterization. *Eur. J. Biochem.* **166** (1987), 11-19.

Paulsson, M.: Basement membrane proteins: structure, assembly, and cellular interactions. *Crit. Rev. Biochem. Molec. Biol.* **27** (1992), 93-127.

Pöschl, E., Fox, J.W., Block, D., Mayer, U. and Timpl, R.: Two non-contiguous regions contribute to nidogen binding to a single EGF-like motif of the laminin  $\gamma 1$  chain. *EMBO J.* **13** (1994), 3741-3747.

Pöschl, E., Mayer, U., Stetefeldt, J., Baumgartner, R., Holak, T.A., Huber, R. and Timpl, R.: Site-directed mutagenesis and structural interpretation of the nidogen binding site of laminin  $\gamma 1$  chain. *EMBO J.* **15** (1996), 5154-5159.

Pottgieser, J., Maurer, P., Mayer, U., Nischt, R., Mann, K., Timpl, R., Krieg, T. and Engel, J.: Changes in calcium and collagen IV binding caused by mutations in the EF hand and other domains of extracellular matrix protein BM-40 (SPARC, osteonectin). *J. Mol. Biol.* **238** (1994), 563-574.

Provencher, S.W. and Glöckner, J.: Estimation of globular protein secondary structure from circular dichroism. *Biochemistry* **20** (1981), 33-37.

Richards, A., Al-Imara, L. and Pope, F.M.: The complete cDNA sequence of laminin  $\alpha 4$  and its relationship to the other human laminin  $\alpha$  chains. *Eur. J. Biochem.* **238** (1996), 813-821.

Roberts, D.D., Rao, C.N., Liotta, L.A., Gralnick, H.R. and Ginsburg, V.: Comparison of the specificities of laminin, thrombospondin, and von Willebrand factor for binding to sulfated glycolipids. *J. Biol. Chem.* **261** (1986), 6872-6877.

Roberts, D.D., Rao, C.N., Magnani, J.L., Spitalnik, S.L., Liotta, L.A., Ginsburg, V.: Laminin binds specifically to sulfated glycolipids. *Proc. Natl. Acad. Sci., USA*, **82** (1985), 1306-1310.

Ryan, M., Christiano, A.M., Engvall, E., Wewer, U.M., Miner, J.H., Sanes, J.R. and Burgeson, R.E.: The functions of laminins: Lessons from *In Vivo* studies. *Matrix Biol.* **15** (1996), 369-381.

Sanes, J.R., Engvall, E., Butkowski, R. and Hunter, D.D.: Molecular heterogeneity of basal laminae: Isoforms of laminin and collagen-IV at the neuromuscular junction and elsewhere. *J. Cell. Biol.* **111** (1990), 1685-1699.

Sanger, F., Nicklen, S and Coulson, A.R.: DNA sequencing with chain-termination inhibitors., *Proc. Natl. Acad. Scie. USA* **74** (1977), 5463-546.

Sasaki, M., Kleinman, H.K., Huber, H., Deutzmann, R. and Yamada, Y.: Laminin, a multidomain protein: the A chain has a unique globular domain and homology with the basement membrane proteoglycan and the laminin B chains. *J. Biol. Chem.* **263** (1988), 16536-16544.

Sasaki, T. and Timpl, R.: Laminins. Guidebook to the extracellular matrix, anchor and adhesion proteins, (1999), pp. 434 – 443, T. Kreis, R. Vale, eds., Oxford University Press.

Sasaki, T., Costell, M., Mann, K. and Timpl, R.: Inhibition of glycosaminoglycan modification of perlecan domain I by site-directed mutagenesis changes protease sensitivity and laminin-1 binding activity. *FEBS Lett.* **435** (1998), 169-172.

Sasaki, T., Wiedeman, H., Matzner, M., Chu, M.-L. and Timpl, R.: Expression of fibulin-2 by fibroblastss and deposition with fibronectin into a fibrillar matrix. *J. Cell Sci.* **109** (1996), 2895-2904.

Sato, S. and Hughes, R.C.: Binding specificity of a baby kidney lectin for H typ hamster I and II chains, polyactosamine glycans, and appropriately glycosylated forms of laminin and fibronectin. *J. Biol. Chem.*, **267** (1992), 6983-6990.

Skubitz, A.P., Letourneau, P.C., Wayner, E. and Furcht, L.T.: Synthetic peptides from the carboxy-terminal globular domain of the A chain of laminin: their ability to promote cell adhesion and neurite outgrowth, and interact with heparin and the  $\beta 1$  integrin subunit. *J. Cell Biol.* **115** (1991), 1137-1148.

Smalheiser, N.R.: Crainin interacts specifically with the sulfatide-binding domain of laminin. *J. Neurosci. Res.* **36** (1993), 528-538.

Sokolovsky, M., Riordan, J.F. and Vallee, B.L.: Tetranitromethane: A reagent for the nitration of tyrosyl residues in proteins. *Biochemistry* **5** (1966), 3582-3589.

Sorokin, L.M., Conzelmann, S., Ekblom, P., Battaglia, C., Aumailley, M. and Timpl, R.: Monoclonal antibodies against laminin A chain fragment E3 and their effects on binding to cells and proteoglycan and on kidney development. *Exp. Cell Res.* **201** (1992), 137-144.

Sorokin, L.M., Sonnenberg, A., Aumailley, M., Timpl, R. and Ekblom, P.: Recognition of the laminin E8 cell-binding site by an integrin possessing the  $\alpha 6$  subunit is essential for epithelial polarization in developing kidney tubules. *J. Cell. Biol.* **111** (1990), 1265-1273.

Stetefeld, J., Mayer, U., Timpl, R. and Huber, R.: Crystal structure of three consecutive laminin-type epidermal growth factor-like (LE) modules of laminin  $\gamma 1$  chain harboring the nidogen binding site. *J. Mol. Biol.* **257** (1996), 644-657.

Sung, U., O'Rear, J.J. and Yurchenco, P.D.: Localization of heparin binding activity in recombinant laminin G domain. *Eur. J. Biochem.* **250** (1997), 138-143.

Takahashi, K.: The reaction of phenylglyoxal with arginine residues in proteins. *J. Biol. Chem.* **243** (1968), 6171-6179.

Talts, J.F., Andac, Z., Göhring, W., Brancaccio, A. und Timpl, R.: Binding of the G domains of laminin  $\alpha 1$  and  $\alpha 2$  chains and perlecan to heparin, sulfatides,  $\alpha$ -dystroglycan and several extracellular matrix proteins. *EMBO J.* **18** (1999), 863-870.

Talts, J.F., Mann, K., Yamada, Y. and Timpl, R.: Structural analysis and proteolytic processing of recombinant G domain of mouse laminin  $\alpha 2$  chain. *FEBS Lett.* **426** (1998), 71-76.

Taraboletti, G., Rao, C.N., Krutzsch, H.C., Liotta, L.A. and Roberts, D.D.: Sulfatide-binding domain of the laminin A chain. *J. Biol. Chem.* **265** (1990), 12253-12258.

Timpl, R.: Antibodies to collagens and procollagens. *Meth. Enzymol.* **82** (1982), 472-498.

Timpl, R. and Brown, J.C.: Supramolecular assembly of basement membranes. *Bioessay* **18** (1996), 123-132.

Timpl, R. and Brown, J.C.: The laminins. *Matrix Biol.* **14** (1994), 275-281.

Timpl, R. and Dziadek, M.: Structure, development and molecular pathology of basement membranes. *Internat. Rev. Exp. Pathol.* **29** (1986), 1-112.

- Timpl, R., Aumailley, M., Gerl, M., Mann, K., Nurcombe, V., Edgar, D. and Deutzmann, R.: Structure and function of the laminin-nidogen complex. *Ann. N.Y. Acad. Sci.* **580** (1990), 311-323.
- Timpl, R., Engel J. and Martin, G.R.: Laminin a multifunctional protein of basement membranes. *Trends Biochem. Sci.* **8** (1983), 207-209.
- Timpl, R.: Macromolecular organisation of basement membranes. *Curr. Op. Cell. Biol.* **8** (1996), 618-624.
- Timpl, R.: Proteoglycans of basement membranes. *Experientia* **49** (1993), 417-428.
- Timpl, R.: Structure and biological activity of basement membrane proteins. *Eur. J. Biochem.* **180** (1989), 487-502.
- Tsen, G., Halfter, W., Kröger, S. and Cole, G.J.: Agrin is a heparan sulfate proteoglycan. *J. Biol. Chem.* **270** (1995), 3392-3399.
- Ushkaryov, Y.A., Petrenko, A.G., Geppert, M. and Südhof, T.C.: Neurexins: synaptic cell surface proteins related to the  $\alpha$ -latrotoxin receptor and laminin. *Science* **257** (1992), 50-56.
- Van der Rest, M. and Garrone R.: Collagen family of proteins. *FASEB J.* **5** (1991), 2814-2823.
- Vara, J.A., Portela, A., Ortín, J., and Jimenez, A.: Expression in mammalian cells of a gene from *Streptomyces alboniger* conferring puromycin resistance. *Nucleic Acids. Res.* **14** (1986), 4617-4624.
- Williamson, R.A., Henry, M.D., Daniels, K.J., Hrstka, R.F., Lee, J.C., Sunada, J., Ibraghimov-Beskrovnyaya, O. and Campbell, K.P.: Dystroglycan is essential for early embryonic development: disruption of Reichert's membrane in Dag1-null mice. *Hum. Mol. Genet.* **6** (1997), 831-841.
- Yurchenco, P.D. and Schittny, J.C.: Molecular architecture of basement membranes. *FASEB J.* **4** (1990), 1577-1590.
- Yurchenco, P.D., Cheng, Y.: Self assembly and calcium-binding sites in laminin. A three-arm interaction model. *J. Biol. Chem.* **268** (1993) 17286-17299.
- Yurchenco, P.D., Cheng, Y.S. and Schittny, J.C.: Heparin modulation of laminin polymerization. *J. Biol. Chem.* **265** (1990), 3981-3991.

Yurchenco, P.D., Sung, U., Ward, M.D., Yamada, Y. and O'Rear, J.J.: Recombinant laminin G domain mediates myoblast adhesion and heparin binding. *J. Biol. Chem.* **268** (1993), 8356-8365.

Yurchenco, P.D.: Assembly of laminin and type IV collagen into basement membrane networks. In *Extracellular Matrix Assembly and Structure* (ed. P.D. Yurchenco, D.E. Birk and R.P. Mecham), Academic Press, San Diego (1994), 351-388.