

References / Publications

- Cell Sheet technology
- Surface modification
- UpCell®
 - Adipose-derived stem / stromal cells
 - Adipose tissue-derived stromal vascular fraction (SVF) cells
 - Bladder
 - Blood outgrowth endothelial cells (BOECs)
 - Bone Marrow-Derived cell / Bone marrow mesenchymal stromal cells / Bone marrow stromal cells
 - Cardiac myoblast / Cardiomyocyte
 - Cardiac stem cells
 - Cardiovascular cells
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 - Corneal endothelial cells
 - Dental epithelial (DE) cells/ Dental mesenchymal (DM) cells
 - Embryonic stem cells
 - Endometrial cells
 - Fibroblast (NIH/3T3)
 - HCT-116(-luc2) <human colon cancer cell line including luciferase 2>
 - Hepatocyte
 - Human 293 (CD4 expressing) cells
 - Human Rotator Cuff-Derived cells
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 - Keratinocyte
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 - Macrophages
 - Mesenchymal stem cell / Mesenchymal Stromal cell
 - Microglia
 - Nasal mucosa epithelial cells
 - Oral mucosal epithelial cell
 - Osteoblasts
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- Peripheral blood mononuclear cells
- Renal cell, MDCK cell
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- Skeletal myoblast
- Smooth muscle cell
- Synoviocyte
- Tendon derived stem / progenitor cell(TSC)
- Thyroid
- Urothelial cell
- Vein endothelial cells
- Review
- RepCell™
- HydroCell®
- cellZscope®

- **Cell Sheet technology**

Kikuchi, A., Okuhara, M., Karikusa, F., Sakurai, Y., and Okano, T. (1998). Two-dimensional manipulation of confluent cultured vascular endothelial cells using temperature-responsive poly(N-isopropylacrylamide)-grafted surfaces. *Journal of Biomaterials Science, Polymer Edition* 9(12), 1331-1348

Okano, T., Yamada, N., Okuhara, M., Sakai, H., and Sakurai, Y. (1995). Mechanism of cell detachment from temperature-modulated, hydrophilic-hydrophobic polymer surfaces. *Biomaterials* 16, 297-303.

Yamada, N., Okano, T., Sakai, H., Karikusa, F., Sawasaki, Y., and Sakurai, Y. (1990). Thermo-responsive polymeric surfaces; control of attachment and detachment of cultured cells. *Die Makromolekulare Chemie, Rapid Communication* 11, 571-576.

- **Surface modification**

Nakajima, R., Kobayashi, T., Moriya, N., Mizutani, M., Kan, K., Nozaki, T., Saitoh, K., Yamato, M., Okano, T., Takeda, S. (2015). A novel closed cell culture device for fabrication of corneal epithelial cell sheets. *J Tissue Eng Regen Med*; 9, 1259-1267.

Kumashiro, Y., Fukumori, K., Takahashi, H., Nakayama, M., Akiyama, Y., Yamato, M., Okano, T. (2013). Modulation of cell adhesion and detachment on thermo-responsive polymeric surfaces through the observation of surface dynamics. *Biointerfaces* 106, 198-207.

Kumashiro, Y., Itoga, K., Kinoshita, Y., Yamato, M., Okano, T. (2013). Development of positive photoresist for controlling cell culture shape on organic substrates. *chem. Lett.*, 42, 741-743.

Matsuzaka, N., Nakayama, M., Takahashi, H., Yamato, M., Kikuchi, A., Okano, T. (2013). Terminal-functionality effect of poly(N-isopropylacrylamide) brush surfaces on temperature-controlled cell adhesion/detachment. *Biomacromolecules* 14, 3164-3171.

Muraoka, M., Shimizu, T., Itoga, K., Takahashi, H., Okano, T. (2013). Control of the formation of vascular networks in 3D tissue engineered constructs. *Biomaterials* 34, 696-703.

Uesugi, K., Akiyama, Y., Hosono, T., Akiyama, Y., Yamato, M., Okano, T., Morishima, K. (2013). Measuring adhesion force of a cell sheet by the ninety-degree peel test using a multi hook type fixture. *Journal of Biomechanical Science and Engineering* Vol. 8, No. 2.

Takahashi, H., Shimizu, T., Nakayama, M., Yamato, M., Okano, T. (2013). The use of anisotropic cell sheets to control orientation during the self-organization of 3D muscle tissue. *Biomaterials* 34, 7372-7380.

Elloumi-Hannachi, I., Maeda, M., Yamato, M. & Okano, T. (2010) Portable microcontact printing device for cell culture. *Biomaterials*, 31(34), 8974-8979.

Elloumi-Hannachi, I., Itoga, K., Kumashiro, Y., Kobayashi, J., Yamato, M. & Okano, T. (2009) Fabrication of transferable micropatterned-co-cultured cell sheets with microcontact printing. *Biomaterials*, 30(29), 5427-5432.

Hannachi, I. E., Yamato, M. & Okano, T. (2009) Cell sheet technology and cell patterning for biofabrication. *Biofabrication*, 1(2), 022002.

Nagase, K., Kobayashi, J. & Okano, T. (2009) Temperature-responsive intelligent interfaces for biomolecular separation and cell sheet engineering. <i>J R Soc Interface</i> , 6 Suppl 3, S293-309.
Nishi, M., Kobayashi, J., Pechmann, S., Yamato, M., Akiyama, Y., Kikuchi, A., Uchida, K., Textor, M., Yajima, H., and Okano, T. (2007). The use of biotin-avidin binding to facilitate biomodification of thermoresponsive culture surfaces. <i>Biomaterials</i> 28, 5471-5476.
Tsuda, Y., Shimizu, T., Yamato, M., Kikuchi, A., Sasagawa, T., Sekiya, S., Kobayashi, J., Chen, G., and Okano, T. (2007). Cellular control of tissue architectures using a three-dimensional tissue fabrication technique. <i>Biomaterials</i> 28, 4939-4946.
Hatakeyama, H., Kikuchi, A., Yamato, M., and Okano, T. (2006). Bio-functionalized thermoresponsive interfaces facilitating cell adhesion and proliferation. <i>Biomaterials</i> 27, 5069-5078.
Hatakeyama, H., Kikuchi, A., Yamato, M., and Okano, T. (2005). Influence of insulin immobilization to thermoresponsive culture surfaces on cell proliferation and thermally induced cell detachment. <i>Biomaterials</i> 26, 5167-5176.
Ebara, M., Yamato, M., Aoyagi, T., Kikuchi, A., Sakai, K., and Okano, T. (2004). Immobilization of cell-adhesive peptides to temperature-responsive surfaces facilitates both serum-free cell adhesion and noninvasive cell harvest. <i>Tissue engineering</i> 10, 1125-1135.
Ebara, M., Yamato, M., Aoyagi, T., Kikuchi, A., Sakai, K., and Okano, T. (2004). Temperature-responsive cell culture surfaces enable "on-off" affinity control between cell integrins and RGD ligands. <i>Biomacromolecules</i> 5, 505-510.
Ebara, M., Yamato, M., Hirose, M., Aoyagi, T., Kikuchi, A., Sakai, K., and Okano, T. (2003). Copolymerization of 2-carboxyisopropylacrylamide with N-isopropylacrylamide accelerates cell detachment from grafted surfaces by reducing temperature. <i>Biomacromolecules</i> 4, 344-349.
Kwon, O.H., Kikuchi, A., Yamato, M., and Okano, T. (2003). Accelerated cell sheet recovery by co-grafting of PEG with PIPAAm onto porous cell culture membranes. <i>Biomaterials</i> 24, 1223-1232.

Kwon, O.H., Kikuchi, A., Yamato, M., Sakurai, Y., and Okano, T. (2000). Rapid cell sheet detachment from poly(N-isopropylacrylamide)-grafted porous cell culture membranes. *Journal of biomedical materials research* 50, 82-89.

Yamato, M., Konno, C., Kushida, A., Hirose, M., Utsumi, M., Kikuchi, A., and Okano, T. (2000). Release of adsorbed fibronectin from temperature-responsive culture surfaces requires cellular activity. *Biomaterials* 21, 981-986.

Uchida, K., Sakai, K., Ito, E., Kwon, O.H., Kikuchi, A., Yamato, M., and Okano, T. (2000). Temperature-dependent modulation of blood platelet movement and morphology on poly(N-isopropylacrylamide)-grafted surfaces. *Biomaterials* 21, 923-929.

- UpCell®
 - Adipose-derived stem / stromal cells

Kim, J., Joo, H., Kim, M., Choi, S., Lee, J., Hong, S., Lim, D. (2016). Transplantation of adipose-derived stem cell sheet attenuates adverse cardiac remodeling in acute myocardial infarction. *TISSUE ENGINEERING Part A*. DOI: 10.1089/ten.tea.2016.0023

Ishida, O., Hagino, I., Nagaya, N., Shimizu, T., Okano, T., Sawa, Y., Mori, H., Yagihara, T. (2015). Adipose-derived stem cell sheet transplantation therapy in a porcine model of chronic heart failure. *Translational Research* 165, 631-639.

Sasagawa, T., Shimizu, T., Sekiya, S., Yamato, M., Okano, T. (2014). Comparison of angiogenic potential between prevascular and non-prevascular layered adipose-derived stem cell-sheets in early post-transplanted period. *J Biomed Mater Res Part A* 102A, 358-364.

Tatsumi, K., Ohashi, K., Matsubara, Y., Kohori, A., Ohno, T., Kakidachi, H., Horii, A., Kanegae, K., Utoh, R., Iwata, T., Okano, T. (2013). Tissue factor triggers procoagulation in transplanted mesenchymal stem cells leading to thromboembolism. *Biochemical and Biophysical Research Communications* 431, 203-209.

Watanabe, N., Ohashi, K., Tatsumi, K., Utoh, R., Shim, I., Kanegae, K., Kashiwakura, Y., Ohmori, T., Sakata, Y., Inoue, M., Hasegawa, M., Okano, T., (2013). Genetically modified adipose tissue-derived stem/stromal cells, using simian immunodeficiency virus-based lentiviral vectors, in the treatment of hemophilia B. *HUMAN GENE THERAPY* 24, 283-294.

Sasagawa, T., Shimizu, T., Sekiya, S., Yamato, M., Okano, T. (2013). Comparison of angiogenic potential between prevascular and non-prevascular layered adipose-derived stem cell-sheets in early post-transplanted period. *J Biomed Mater Res Part A*, 102A: 358-365.

Watanabe, N., Ohashi, K., Tatsumi, K., Utoh, R., Shim, I., Kanegae, K., Kashiwakura, Y., Ohmori, T., Sakata, Y., Inoue, M., Hasegawa, M., Okano, T. (2013). Genetically modified adipose tissue-derived stem/stromal cells, using simian immunodeficiency virus-based lentiviral vectors, in the treatment of hemophilia B. *HUMAN GENE THERAPY* 24, 283-294.

Hamdi, H., Planat-Benard, V., Bel, A., Puymirat, E., Geha, R., Pidial, L., Nematalla, H., Bellamy, V., Bouaziz, P., Peyrard, S., Casteilla, L., Bruneval, P., Hagege, A. A., Agbulut, O. & Menasche, P. (2011) Epicardial adipose stem cell sheets results in greater post-infarction survival than intramyocardial injections. *Cardiovasc Res*, 91(3), 483-491.

- Adipose tissue-derived stromal vascular fraction (SVF) cells

Kamata, S., Miyagawa, S., Fukushima, S., Imanishi, Y., Saito, A., Maeda, N., Shimomura, I., Sawa, Y. (2015). Targeted delivery of adipocytokines into the heart by induced adipocyte cell-sheet transplantation yields immune tolerance and functional recovery in autoimmune-associated myocarditis in rats. *Circ J* 79, 169-179

➤ Bladder

Watanabe, E., Yamato, M., Shiroyanagi, Y., Tanabe, K. & Okano, T. (2011) Bladder augmentation using tissue-engineered autologous oral mucosal epithelial cell sheets grafted on demucosalized gastric flaps. *Transplantation*, 91(7), 700-706.

➤ Blood outgrowth endothelial cells (BOECs)

Tatsumi, K., Sugimoto, M., Lillicrap, D., Shima, M., Ohashi, K., Okano, T., Matsui, H. (2013). A novel cell-sheet technology that achieves durable factor viii delivery in a mouse model of hemophilia A. PLoS ONE 8(12): e83280.

- Bone Marrow-Derived cell / Bone marrow mesenchymal stromal cells / Bone marrow stromal cells

Imamura, T., Ogawa, T., Minagawa, T., Yokoyama, H., Nakazawa, M., Nishizawa, O., Ishizuka, O. (2015). Engineered bone marrow-derived cell sheets restore structure and function of radiation-injured rat urinary bladders. *TISSUE ENGINEERING Part A* Volume 21 Numbers 9,

Ito, M., Shichinohe, H., Houkin, K., Kuroda, S. (2014). Application of cell sheet technology to bone marrow stromal cell transplantation for rat brain infarct. *J Tissue Eng Regen Med*<

Tano, N., Narita, T., Kaneko, M., Ikebe, C., Coppen, S., Campbell, N., Shiraishi, M., Shintani, Y., Suzuki, K. (2014). Epicardial placement of mesenchymal stromal cell-sheets for the treatment of ischemic cardiomyopathy; in vivo proof-of-concept study. *Moleculartherapy* vol. 22 no. 10, 1864-1871.

➤ Cardiac myoblast / Cardiomyocyte

Matsuura, K., Kodama, F., Sugiyama, K., Shimizu, T., Hagiwara, N., Okano, T. (2015). Elimination of remaining undifferentiated induced pluripotent stem cells in the process of human cardiac cell sheet fabrication using a methionine-free culture condition. *TISSUE ENGINEERING Part C*, Volume 21, Number 3.

Komae, H., Sekine, H., Dobashi, I., Matsuura, K., Ono, M., Okano, T., Shimizu, T. (2015). Three-dimensional functional human myocardial tissues fabricated from induced pluripotent stem cells. *J Tissue Eng Regen Med*. DOI: 10.1002/term.1995

Hasegawa, A., Haraguchi, Y., Shimizu, T., Okano, T. (2015). Rapid fabrication system for three-dimensional tissues using cell sheet engineering and centrifugation. *J Biomed Mater Res Part A* 103A, 3825-3833.

Sakaguchi, K., Shimizu, T., Horaguchi, S., Sekine, H., Yamato, M., Umezu, M., Okano, T. (2013). In vitro engineering of vascularized tissue surrogates. *Sci. Rep.* 3, 1316.

Sekine, H., Shimizu, T., Sakaguchi, K., Dobashi, I., Wada, M., Yamato, M., Kobayashi, E., Umezu, M., Okano, T. (2013). In vitro fabrication of functional three-dimensional tissues with perfusable blood vessels. *Nat. Commun.* 4, 1399.

Shioyama, T., Haraguchi, Y., Muragaki, Y., Shimizu, T., Okano, T. (2013). New isolation system for collecting living cells from tissue. *Journal of Bioscience and Bioengineering* VOL. 115 No. 1, 100-103.

Fu, X., Lee, J., Miwa, K., Shimizu, T., Takagishi, Y., Hirabayashi, M., Watabe, K., Usui, A., Kodama, I., Ueda, Y. (2013). Sympathetic innervation induced in engrafted engineered cardiomyocyte sheets by glial cell line derived neurotrophic factor in vivo. *BioMed Research International* doi.org/10.1155/2013/532720

Kawamura, M., Miyagawa, S., Fukushima, S., Saito, A., Miki, K., Ito, E., Sougawa, N., Kawamura, T., Daimon, T., Shimizu, T., Okano, T., Toda, K., Sawa, Y. (2013). Enhanced survival of transplanted human induced pluripotent stem cell-derived cardiomyocytes by the combination of cell sheets with the pedicled omental flap technique in a porcine heart. *Circulation* 128, S87-S94.

<p>Sekine, H., Shimizu, T., Dobashi, I., Matsuura, K., Hagiwara, N., Takahashi, M., Kobayashi, E., Yamato, M., Okano, T. (2011). Cardiac cell sheet transplantation improves damaged heart function via superior cell survival in comparison with dissociated cell injection. <i>TISSUE ENGINEERING Part A</i>, Volume 17, Numbers 23 and 24.</p>
<p>Siltanen, A., Kitabayashi, K., Lakkisto, P., Makela, J., Patila, T., Ono, M., Tikkanen, I., Sawa, Y., Kankuri, E. & Harjula, A. (2011) Hhgf overexpression in myoblast sheets enhances their angiogenic potential in rat chronic heart failure. <i>PLoS One</i>, 6(4), e19161.</p>
<p>Siltanen, A., Kitabayashi, K., Patila, T., Ono, M., Tikkanen, I., Sawa, Y., Kankuri, E. & Harjula, A. (2011) Bcl-2 improves myoblast sheet therapy in rat chronic heart failure. <i>Tissue Eng Part A</i>, 17(1-2), 115-125.</p>
<p>Haraguchi, Y., Shimizu, T., Yamato, M. & Okano, T. (2010) Electrical interaction between cardiomyocyte sheets separated by non-cardiomyocyte sheets in heterogeneous tissues. <i>J Tissue Eng Regen Med</i>, 4(4), 291-299.</p>
<p>Hata, H., Bar, A., Dorfman, S., Vukadinovic, Z., Sawa, Y., Haverich, A. & Hilfiker, A. (2010) Engineering a novel three-dimensional contractile myocardial patch with cell sheets and decellularised matrix. <i>Eur J Cardiothorac Surg</i>, 38(4), 450-455.</p>
<p>Kitabayashi, K., Siltanen, A., Patila, T., Mahar, M. A., Tikkanen, I., Koponen, J., Ono, M., Sawa, Y., Kankuri, E. & Harjula, A. (2010) Bcl-2 expression enhances myoblast sheet transplantation therapy for acute myocardial infarction. <i>Cell Transplant</i>, 19(5), 573-588.</p>
<p>Shimizu, K., Fujita, H. & Nagamori, E. (2010) Micropatterning of single myotubes on a thermoresponsive culture surface using elastic stencil membranes for single-cell analysis. <i>J Biosci Bioeng</i>, 109(2), 174-178.</p>
<p>Sasagawa, T., Shimizu, T., Sekiya, S., Haraguchi, Y., Yamato, M., Sawa, Y. & Okano, T. (2010) Design of prevascularized three-dimensional cell-dense tissues using a cell sheet stacking manipulation technology. <i>Biomaterials</i>, 31(7), 1646-1654.</p>
<p>Shimizu, T., Sekine, H., Yamato, M. & Okano, T. (2009) Cell sheet-based myocardial tissue engineering: New hope for damaged heart rescue. <i>Curr Pharm Des</i>, 15(24), 2807-2814.</p>

<p>Matsuura, K., Honda, A., Nagai, T., Fukushima, N., Iwanaga, K., Tokunaga, M., Shimizu, T., Okano, T., Kasanuki, H., Hagiwara, N. & Komuro, I. (2009) Transplantation of cardiac progenitor cells ameliorates cardiac dysfunction after myocardial infarction in mice. <i>J Clin Invest</i>, 119(8), 2204-2217.</p>
<p>Okura, H., Matsuyama, A., Lee, C. M., Saga, A., Kakuta-Yamamoto, A., Nagao, A., Sougawa, N., Sekiya, N., Takekita, K., Shudo, Y., Miyagawa, S., Komoda, H., Okano, T. & Sawa, Y. (2009) Cardiomyoblast-like cells differentiated from human adipose tissue-derived mesenchymal stem cells improve left ventricular dysfunction and survival in a rat myocardial infarction model. <i>Tissue Eng Part C Methods</i>, 16(3), 417-425.</p>
<p>Sekiya, N., Matsumiya, G., Miyagawa, S., Saito, A., Shimizu, T., Okano, T., Kawaguchi, N., Matsuura, N. & Sawa, Y. (2009) Layered implantation of myoblast sheets attenuates adverse cardiac remodeling of the infarcted heart. <i>J Thorac Cardiovasc Surg</i>, 138(4), 985-993.</p>
<p>Masuda, S., Shimizu, T., Yamato, M., and Okano, T. (2008). Cell sheet engineering for heart tissue repair. <i>Advanced drug delivery reviews</i> 60, 277-285.</p>
<p>Shimizu, T., Sekine, H., Yang, J., Isoi, Y., Yamato, M., Kikuchi, A., Kobayashi, E., and Okano, T. (2006). Polysurgery of cell sheet grafts overcomes diffusion limits to produce thick, vascularized myocardial tissues. <i>The FASEB journal</i> 20, 708-710.</p>
<p>Shimizu, T., Sekine, H., Isoi, Y., Yamato, M., Kikuchi, A., and Okano, T. (2006). Long-term survival and growth of pulsatile myocardial tissue grafts engineered by the layering of cardiomyocyte sheets. <i>Tissue engineering</i> 12, 499-507.</p>
<p>Sekine, H., Shimizu, T., Yang, J., Kobayashi, E., and Okano, T. (2006). Pulsatile myocardial tubes fabricated with cell sheet engineering. <i>Circulation</i> 114, I87-93.</p>
<p>Sekiya, S., Shimizu, T., Yamato, M., Kikuchi, A., and Okano, T. (2006). Bioengineered cardiac cell sheet grafts have intrinsic angiogenic potential. <i>Biochemical and biophysical research communications</i> 341, 573-582.</p>
<p>Sekine, H., Shimizu, T., Kosaka, S., Kobayashi, E., and Okano, T. (2006). Cardiomyocyte bridging between hearts and bioengineered myocardial tissues with mesenchymal transition of mesothelial cells. <i>J Heart Lung Transplant</i> 25, 324-332.</p>

<p>Haraguchi, Y., Shimizu, T., Yamato, M., Kikuchi, A., and Okano, T. (2006). Electrical coupling of cardiomyocyte sheets occurs rapidly via functional gap junction formation. <i>Biomaterials</i> 27, 4765-4774.</p>
<p>Furuta, A., Miyoshi, S., Itabashi, Y., Shimizu, T., Kira, S., Hayakawa, K., Nishiyama, N., Tanimoto, K., Hagiwara, Y., Satoh, T., Fukada, K., Okano, T. and Ogawa, S. (2006). Pulsatile cardiac tissue grafts using a novel three-dimensional cell sheet manipulation technique functionally integrates with the host heart, in vivo. <i>Circulation research</i> 98, 705-712.</p>
<p>Itabashi, Y., Miyoshi, S., Yuasa, S., Fujita, J., Shimizu, T., Okano, T., Fukuda, K., and Ogawa, S. (2005). Analysis of the electrophysiological properties and arrhythmias in directly contacted skeletal and cardiac muscle cell sheets. <i>Cardiovascular research</i> 67, 561-570.</p>
<p>Miyagawa, S., Sawa, Y., Sakakida, S., Taketani, S., Kondoh, H., Memon, I.A., Imanishi, Y., Shimizu, T., Okano, T., and Matsuda, H. (2005). Tissue cardiomyoplasty using bioengineered contractile cardiomyocyte sheets to repair damaged myocardium: their integration with recipient myocardium. <i>Transplantation</i> 80, 1586-1595.</p>
<p>Shimizu, T., Yamato, M., Kikuchi, A., and Okano, T. (2003). Cell sheet engineering for myocardial tissue reconstruction. <i>Biomaterials</i> 24, 2309-2316.</p>
<p>Shimizu, T., Yamato, M., Isoi, Y., Akutsu, T., Setomaru, T., Abe, K., Kikuchi, A., Umezu, M., and Okano, T. (2002). Fabrication of pulsatile cardiac tissue grafts using a novel 3-dimensional cell sheet manipulation technique and temperature-responsive cell culture surfaces. <i>Circulation research</i> 90, e40-e48.</p>
<p>Shimizu, T., Yamato, M., Akutsu, T., Shibata, T., Isoi, Y., Kikuchi, A., Umezu, M., and Okano, T. (2002). Electrically communicating three-dimensional cardiac tissue mimic fabricated by layered cultured cardiomyocyte sheets. <i>Journal of biomedical materials research</i> 60, 110-117.</p>
<p>Shimizu, T., Yamato, M., Kikuchi, A., and Okano, T. (2001). Two-dimensional manipulation of cardiac myocyte sheets utilizing temperature-responsive culture dishes augments the pulsatile amplitude. <i>Tissue Engineering</i> 7, 141-151.</p>

➤ Cardiac stem cells

Kamata, S., Miyagawa, S., Fukushima, S., Nakatani, S., Kawamoto, A., Saito, A., Harada, A., Shimizu, T., Daimon, T., Okano, T., Asahara, T., Sawa, Y. (2014). Improvement of cardiac stem cell sheet therapy for chronic ischemic injury by adding endothelial progenitor cell transplantation: analysis of layer-specific regional cardiac function. *Cell Transplantation* Vol 23, 1305-1319.

➤ Cardiovascular cells

Masumoto, H., Ikuno, T., Takeda, M., Fukushima, H., Marui, A., Katayama, S., Shimizu, T., Ikeda, T., Okano, T., Sakata, R., Yamashita, J. (2014). Human iPS cell-engineered cardiac tissue sheets with cardiomyocytes and vascular cells for cardiac regeneration. SCIENTIFIC REPORTS. DOI: 10.1038/srep06716

➤ Chondrocyte

Shimizu, R., Kamei, N., Adachi, N., Hamanishi, M., Kamei, G., Mahmoud, E., Nakano, T., Iwata, T., Yamato, M., Okano, T., Ochi, M. (2015). Repair mechanism of osteochondral defect promoted by bioengineered chondrocyte sheet. *TISSUE ENGINEERING Part A* Volume 21, Numbers 5 & 6.

Shudo, Y., Cohen, J., MacArthur, J., Goldstone, A., Otsuru, S., Trubelja, A., Patel, J., Edwards, B., Hung, G., Fairman, A., Brusalis, C., Hiesinger, W., Atluri, P., Hiraoka, A., Miyagawa, S., Sawa, Y., Woo, Y. (2015). A tissue-engineered chondrocyte cell sheet induces extracellular matrix modification to enhance ventricular biomechanics and attenuate myocardial stiffness in ischemic cardiomyopathy. *TISSUE ENGINEERING Part A*, Volume 21 Numbers 19 & 20.

Takaku, Y., Murai, K., Ukai, T., Ito, S., Kokubo, M., Satoh, M., Kobayashi, E., Yamato, M., Okano, T., Takeuchi, M., Mochida, J., Sato, M. (2014). In vivo cell tracking by bioluminescence imaging after transplantation of bioengineered cell sheets to the knee joint. *Biomaterials* 35, 2199-2206.

Sato M. (2010) Cell sheet technologies for cartilage repair, *Regenerative medicine and biomaterials for the repair of connective tissues*. (Edited by Archer C and Ralphs J) WOODHEAD Publishing Limited, CRC Press LLC, 251-265.

Mitani, G., Sato, M., Lee, J. I., Kaneshiro, N., Ishihara, M., Ota, N., Kokubo, M., Sakai, H., Kikuchi, T. & Mochida, J. (2009) The properties of bioengineered chondrocyte sheets for cartilage regeneration. *BMC Biotechnol* 6, 9-17.

Sato, M., Ishihara, M., Furukawa, K., Kaneshiro, N., Nagai, T., Mitani, G., Kutsuna, T., Ohta, N., Kokubo, M., Kikuchi, T., Sakai, H., Ushida, T., Kikuchi, M. and Mochida, J. (2008) Recent technological advancements related to articular cartilage regeneration. *Med BioI Eng Comput* 46, 735-743

Kaneshiro. N., Sato. M., Ishihara. M., Mitani. G., Sakai. H., Kikuchi. T. and Mochida. J. (2007). Cultured articular chondrocytes sheets for partial thickness cartilage defects utilizing temperature-responsive culture dishes. *European Cells and Materials* 13, 87-92.

Kaneshiro, N., Sato, M., Ishihara, M., Mitani, G., Sakai, H., and Mochida, J. (2006). Bioengineered chondrocyte sheets may be potentially useful for the treatment of partial thickness defects of articular cartilage. *Biochemical and biophysical research communications* 349, 723-731.

➤ Cornea

- Kobayashi, T., Yamato, M., Okano, T., Watanabe, Y. (2013). Quantitative evaluation system for tissue-engineered corneal epithelial cell sheets using image-based technology. *Journal of Regenerative Medicine & Tissue Engineering*, doi: 10.7243/2050-1218-2-2
- Takagi, R., Yamato, M., Murakami, D., Kondo, M., Yang, J., Ohki, T., Nishida, K., Kohno, C. & Okano, T. (2011) Preparation of keratinocyte culture medium for the clinical applications of regenerative medicine. *J Tissue Eng Regen Med*, 5(4), e63-73.
- Hayashi, R., Yamato, M., Takayanagi, H., Oie, Y., Kubota, A., Hori, Y., Okano, T. & Nishida, K. (2010) Validation system of tissue-engineered epithelial cell sheets for corneal regenerative medicine. *Tissue Eng Part C Methods*, 16(4), 553-560.
- Watanabe, K., Yamato, M., Hayashida, Y., Yang, J., Kikuchi, A., Okano, T., Tano, Y., and Nishida, K. (2007). Development of transplantable genetically modified corneal epithelial cell sheets for gene therapy. *Biomaterials* 28, 745-749.
- Kanayama, S., Nishida, K., Yamato, M., Hayashi, R., Sugiyama, H., Soma, T., Maeda, N., Okano, T., and Tano, Y. (2007). Analysis of angiogenesis induced by cultured corneal and oral mucosal epithelial cell sheets in vitro. *Experimental eye research* 85, 772-781.
- Sumide, T., Nishida, K., Yamato, M., Ide, T., Hayashida, Y., Watanabe, K., Yang, J., Kohno, C., Kikuchi, A., Maeda, N., Watanabe, H., Okano, T. and Tano, Y. (2006). Functional human corneal endothelial cell sheets harvested from temperature-responsive culture surfaces. *The FASEB Journal* 20, 392-394.
- Ide, T., Nishida, K., Yamato, M., Sumide, T., Utsumi, M., Nozaki, T., Kikuchi, A., Okano, T., and Tano, Y. (2006). Structural characterization of bioengineered human corneal endothelial cell sheets fabricated on temperature-responsive culture dishes. *Biomaterials* 27, 607-614.
- Hayashida, Y., Nishida, K., Yamato, M., Yang, J., Sugiyama, H., Watanabe, K., Hori, Y., Maeda, N., Kikuchi, A., Okano, T. and Tano, Y. (2006). Transplantation of tissue-engineered epithelial cell sheets after excimer laser photoablation reduces postoperative corneal haze. *Investigative ophthalmology & visual science* 47, 552-557.

Umemoto, T., Yamato, M., Nishida, K., Kohno, C., Yang, J., Tano, Y., and Okano, T. (2005). Rat limbal epithelial side population cells exhibit a distinct expression of stem cell markers that are lacking in side population cells from the central cornea. *FEBS letters* 579, 6569-6574.

Watanabe, K., Nishida, K., Yamato, M., Umemoto, T., Sumide, T., Yamamoto, K., Maeda, N., Watanabe, H., Okano, T., and Tano, Y. (2004). Human limbal epithelium contains side population cells expressing the ATP-binding cassette transporter ABCG2. *FEBS letters* 565, 6-10.

Nishida, K., Yamato, M., Hayashida, Y., Watanabe, K., Maeda, N., Watanabe, H., Yamamoto, K., Nagai, S., Kikuchi, A., Tano, Y. and Okano, T. (2004). Functional bioengineered corneal epithelial sheet grafts from corneal stem cells expanded ex vivo on a temperature-responsive cell culture surface. *Transplantation* 77, 379-385.

➤ Corneal endothelial cells

Lai, J. Y. & Li, Y. T. (2010) Functional assessment of cross-linked porous gelatin hydrogels for bioengineered cell sheet carriers. *Biomacromolecules*, 11(5), 1387-1397.

- Dental epithelial (DE) cells/ Dental mesenchymal (DM) cells

Monteiro, N., Smith, E., Angstadt, S., Zhang, W., Khademhosseini, A., Yelick, P. (2016). Dental cell sheet biomimetic tooth bud model. *Biomaterials* 106, 167-179.

➤ Embryonic stem cells

Matsuura, K., Masuda, S., Haraguchi, Y., Yasuda, N., Shimizu, T., Hagiwara, N., Zandstra, P. W. & Okano, T. (2011) Creation of mouse embryonic stem cell-derived cardiac cell sheets. *Biomaterials*, 32(30), 7355-7362.

Bel, A., Planat-Bernard, V., Saito, A., Bonnevie, L., Bellamy, V., Sabbah, L., Bellabas, L., Brinon, B., Vanneaux, V., Pradeau, P., Peyrard, S., Larghero, J., Pouly, J., Binder, P., Garcia, S., Shimizu, T., Sawa, Y., Okano, T., Bruneval, P., Desnos, M., Hagege, A. A., Casteilla, L., Puceat, M. & Menasche, P. (2010) Composite cell sheets: A further step toward safe and effective myocardial regeneration by cardiac progenitors derived from embryonic stem cells. *Circulation*, 122(11 Suppl), S118-123.

➤ Endometrial cells

Takagi, S., Shimizu, T., Kuramoto, G., Ishitani, K., Matsui, H., Yamato, M., Okano, T. (2014). Reconstruction of functional endometrium-like tissue in vitro and in vivo using cell sheet engineering. *Biochemical and Biophysical Research Communications* 446, 335-340.

➤ Fibroblast (NIH/3T3)

Matsushima, H., Kuroki, T., Adachi, T., Kitasato, A., Ono, S., Tanaka, T., Hirabaru, M., Kuroshima, N., Hirayama, T., Sakai, Y., Soyama, A., Hidaka, M., Takatsuki, M., Kin, T., Shapiro, J., Eguchi, S. (2016). Human fibroblast sheet promotes human pancreatic islet survival and function in vitro. *Cell Transplantation* Vol. 25, 1525-1537.

Baimakhanov, Z., Yamanouchi, K., Sakai, Y., Koike, M., Soyama, A., Hidaka, M., Takatsuki, M., Fujita, F., Kanetaka, K., Kuroki, T., Eguchi, S. (2016). Efficacy of multilayered hepatocyte sheet transplantation for radiation-induced liver damage and partial hepatectomy in a rat model. *Cell Transplantation* Vol. 25, 549-558.

Sakai, Y., Koike, M., Soyama, A., Hidaka, M., Kuroki, T., Eguchi, S. (2015). Rapid production of engineered human primary hepatocyte/fibroblast sheets. *Data in Brief* 5, 498-501.

Sasagawa, T., Shimizu, T., Yamato, M., Okano, T. (2014). Expression profiles of angiogenesis-related proteins in prevascular three-dimensional tissue using cell-sheet engineering. *Biomaterials* 35, 206-213.

Sugibayashi, K., Kumashiro, Y., Shimizu, T., Kobayashi, J., Okano, T. (2012). A molded hyaluronic acid gel as a micro-template for blood capillaries. *Journal of Biomaterials Sciences, Polymer Edition*, 24:2, 135-147.

Lee, E. L. & Von Recum, H. A. (2010) Cell culture platform with mechanical conditioning and nondamaging cellular detachment. *J Biomed Mater Res A*, 93(2), 411-418.

- HCT-116(-luc2) <human colon cancer cell line including luciferase 2>

Suzuki, R., Aruga, A., Kobayashi, H., Yamato, M., Yamamoto, M. (2014).
Development of a novel in vivo cancer model using cell sheet engineering.
ANTICANCER RESEARCH 34, 4747-4754.

➤ Hepatocyte

Baimakhanov, Z., Yamanouchi, K., Sakai, Y., Koike, M., Soyama, A., Hidaka, M., Takatsuki, M., Fujita, F., Kanetaka, K., Kuroki, T., Eguchi, S. (2016). Efficacy of multilayered hepatocyte sheet transplantation for radiation-induced liver damage and partial hepatectomy in a rat model. <i>cell transplantation</i> Vol. 25, 549-558.
Sakai, Y., Koike, M., Soyama, A., Hidaka, M., Kuroki, T., Eguchi, S. (2015). Rapid production of engineered human primary hepatocyte/fibroblast sheets. <i>Data in Brief</i> 5, 498-501.
Sakai, Y., Koike, M., Hasegawa, H., Yamanouchi, K., Soyama, A., Takatsuki, M., Kuroki, T., Ohashi, K., Okano, T., Eguchi, S. (2013). Rapid fabricating technique for multi-layered human hepatic cell sheets by forceful contraction of the fibroblast monolayer. <i>PLoS ONE</i> 8(7), e70970.
Ohno, M., Motojima, K., Okano, T. & Taniguchi, A. (2009) Maturation of the extracellular matrix and cell adhesion molecules in layered co-cultures of hepg2 and endothelial cells. <i>J Biochem</i> , 145(5), 591-597.
Ohno, M., Motojima, K., Okano, T. & Taniguchi, A. (2009) Induction of drug-metabolizing enzymes by phenobarbital in layered co-culture of a human liver cell line and endothelial cells. <i>Biol Pharm Bull</i> , 32(5), 813-817.
Takayama, G., Taniguchi, A., and Okano, T. (2007). Identification of differentially expressed genes in hepatocyte/endothelial cell co-culture system. <i>Tissue engineering</i> 13, 159-166.
Ohashi, K., Yokoyama, T., Yamato, M., Kuge, H., Kanehiro, H., Tsutsumi, M., Amanuma, T., Iwata, H., Yang, J., Okano, T. and Nakajima, Y. (2007). Engineering functional two- and three-dimensional liver systems in vivo using hepatic tissue sheets. <i>Nat Med</i> 13, 880-885.
Kurosawa, Y., Taniguchi, A., and Okano, T. (2005). Novel method to examine hepatocyte-specific gene expression in a functional coculture system. <i>Tissue engineering</i> 11, 1650-1657.
Harimoto, M., Yamato, M., Hirose, M., Takahashi, C., Isoi, Y., Kikuchi, A., and Okano, T. (2002). Novel approach for achieving double-layered cell sheets co-culture: overlaying endothelial cell sheets onto monolayer hepatocytes utilizing temperature-responsive culture dishes. <i>Journal of biomedical materials research</i> 62, 464-470.

Hirose, M., Yamato, M., Kwon, O.H., Harimoto, M., Kushida, A., Shimizu, T., Kikuchi, A., and Okano, T. (2000). Temperature-responsive surface for novel co-culture systems of hepatocytes with endothelial cells: 2-D patterned and double layered co-cultures. *Yonsei medical journal* 41, 803-813.

- Human 293 (CD4 expressing) cells

Long, Y., Meng, F., Kondo, N., Iwamoto, A. & Matsuda, Z. (2011) Conserved arginine residue in the membrane-spanning domain of hiv-1 gp41 is required for efficient membrane fusion. *Protein Cell*, 2(5), 369-376.

Kondo, N., Miyauchi, K., Meng, F., Iwamoto, A. & Matsuda, Z. (2010) Conformational changes of the hiv-1 envelope protein during membrane fusion are inhibited by the replacement of its membrane-spanning domain. *J Biol Chem*, 285(19), 14681-14688.

➤ Human Rotator Cuff-Derived cells

Harada, Y., Mifune, Y., Inui, A., Sakata, R., Muto, T., Takase, F., Ueda, Y., Kataoka, T., Kokubu, T., Kuroda, R., Kurosaka, M. (2016). Rotator cuff repair using cell sheets derived from human rotator cuff in a rat model. *J Orthop Res*. DOI 10.1002/jor.23289

➤ Islet

Yamashita, S., Ohashi, K., Utoh, R., Okano, T., Yamamoto, M. (2015). Human laminin isotype coating for creating islet cell sheets. *Cell Medicine* Vol. 8, 39-46.

Shimizu, H., Ohashi, K., Saito, T., Utoh, R., Ise, K., Yamato, M., Okano, T., Gotoh, M. (2013). Topographical arrangement of α - and β -cells within neo-islet tissue engineered by islet cell sheet transplantation in mice. *Transplantation Proceedings* 45, 1881-1884.

Shimizu, H., Ohashi, K., Utoh, R., Ise, K., Gotoh, M., Yamato, M. and Okano, T. (2009). Bioengineering of a functional sheet of islet cells for the treatment of diabetes mellitus. *Biomaterials* 30, 5943-5949

➤ Keratinocyte

Osada, A., Sekine, H., Soejima, K., Sakurai, H., Shimizu, T. (2016). Harvesting epithelial keratinocyte sheets from temperature-responsive dishes preserves basement membrane proteins and improves cell survival in a skin defect model. *J Tissue Eng Regen Med*,

Fujisawa, D., Sekine, H., Okano, T., Sakurai, H., Shimizu, T. (2015). Ex vivo prefabricated rat skin flap using cell sheets and an arteriovenous vascular bundle. *Plast Reconstr Surg Glob Open*, 3:e424.

Yamato, M., Utsumi, M., Kushida, A., Konno, C., Kikuchi, A., and Okano, T. (2001). Thermo-responsive culture dishes allow the intact harvest of multilayered keratinocyte sheets without dispase by reducing temperature. *Tissue engineering* 7, 473-480.

➤ Lung

Kanzaki, M., Yamato, M., Yang, J., Sekine, H., Kohno, C., Takagi, R., Hatakeyama, H., Isaka, T., Okano, T., and Onuki, T. (2007). Dynamic sealing of lung air leaks by the transplantation of tissue engineered cell sheets. *Biomaterials* 28, 4294-4302.

Kanzaki, M., Yamato, M., Hatakeyama, H., Kohno, C., Yang, J., Umemoto, T., Kikuchi, A., Okano, T., and Onuki, T. (2006). Tissue engineered epithelial cell sheets for the creation of a bioartificial trachea. *Tissue engineering* 12, 1275-1283.

Nandkumar, M.A., Yamato, M., Kushida, A., Konno, C., Hirose, M., Kikuchi, A., and Okano, T. (2002). Two-dimensional cell sheet manipulation of heterotypically co-cultured lung cells utilizing temperature-responsive culture dishes results in long-term maintenance of differentiated epithelial cell functions. *Biomaterials* 23, 1121-1130.

➤ Macrophages

Kato, C. & Kojima, N. (2010) Signr1 ligation on murine peritoneal macrophages induces il-12 production through nfkappab activation. Glycoconj J, 27(5), 525-531.

➤ Mesenchymal stem cell / Mesenchymal Stromal cell

Pangesty, A., Arahira, T., Todo, M. (2016). Characterization of tensile mechanical behavior of MSCs/PLCL hybrid layered sheet. <i>J. Funct. Biomater.</i> 7, 14,
Chang, D., Shimizu, T., Haraguchi, Y., Gao, S., Sakaguchi, K., Umezu, M., Yamato, M., Liu, Z., Okano, T. (2015). Time course of cell sheet adhesion to porcine heart tissue after transplantation. <i>PLOS ONE</i> DOI:10.1371/journal.pone.0137494
Kawamura, M., Miyagawa, S., Fukushima, S., Saito, A., Toda, K., Daimon, T., Shimizu, T., Okano, T., Sawa, Y. (2015). Xenotransplantation of bone marrow-derived human mesenchymal stem cell sheets attenuates left ventricular remodeling in a porcine ischemic cardiomyopathy model. <i>TISSUE ENGINEERING Part A, Volume 21, Numbers 15 and 16.</i>
Tano, N., Narita, T., Kaneko, M., Ikebe, C., Coppen, S., Campbell, N., Shiraishi, M., Shintani, Y., Suzuki, K. (2014). Epicardial placement of mesenchymal stromal cell-sheets for the treatment of ischemic cardiomyopathy; in vivo proof-of-concept study. <i>Moleculartherapy</i> vol. 22 no. 10, 1864-1871.
Tatsumi, K., Ohashi, K., Matsubara, Y., Kohori, A., Ohno, T., Kakidachi, H., Horii, A., Kanegae, K., Utoh, R., Iwata, T., Okano, T. (2013). Tissue factor triggers procoagulation in transplanted mesenchymal stem cells leading to thromboembolism. <i>Biochemical and Biophysical Research Communications</i> 431, 203-209.
Miyahara, Y., Nagaya, N., Kataoka, M., Yanagawa, B., Tanaka, K., Hao, H., Ishino, K., Ishida, H., Shimizu, T., Kangawa, K., Sano, S., Okano, T., Kitamura, S. and Mori, H. (2006). Monolayered mesenchymal stem cells repair scarred myocardium after myocardial infarction. <i>Nature medicine</i> 12, 459-465.

➤ Microglia

Nakajima, K., Honda, S., Nakamura, Y., Lopez-Redondo, F., Kohsaka, S., Yamato, M., Kikuchi, A., and Okano, T. (2001). Intact microglia are cultured and non-invasively harvested without pathological activation using a novel cultured cell recovery method. *Biomaterials* 22, 1213-1223.

➤ Nasal mucosa epithelial cells

Hama, T., Yamamoto, K., Yaguchi, Y., Murakami, D., Sasaki, H., Yamato, M., Okano, T., Kojima, H. (2015). Autologous human nasal epithelial cell sheet using temperature-responsive culture insert for transplantation after middle ear surgery. *J Tissue Eng Regen Med*.

Yamamoto, K., Hama, T., Yamato, M., Uchimizu, H., Sugiyama, H., Takagi, R., Yaguchi, Y., Okano, T., Kojima, H. (2015). The effect of transplantation of nasal mucosal epithelial cell sheets after middle ear surgery in a rabbit model. *Biomaterials* 42, 87-93.

➤ Oral mucosal epithelial cell

Bardag-Gorce, F., Hoft, R., Wood, A., Oliva, J., Niihara, H., Makalinao, A., Thropay, J., Pan, D., Meepe, I., Tiger, K., Garcia, J., Laporte, A., French, S., Niihara, Y. (2016). The role of E-cadherin in maintaining the barrier function of corneal epithelium after treatment with cultured autologous oral mucosa epithelial cell sheet grafts for limbal stem deficiency. *Journal of Ophthalmology*. DOI.org/10.1155/2016/4805986

Kuramoto, G., Takagi, S., Ishitani, K., Shimizu, T., Okano, T., Matsui, H. (2015). Preventive effect of oral mucosal epithelial cell sheets on intrauterine adhesions. *Human Reproduction* Vol. 30 No. 2, 406-416.

Kocaba, V., Thepot, A., Yamato, M., Daisuke, M., Kellal, M., Mojallal, A., Damour, O., & Burillon, C. (2014) Long-Term Results of Cultured Autologous Oral Mucosa Epithelial Cell-Sheet (CAOMECS) Graft for the Treatment of Blindness Due to Bilateral Limbal Stem Cell Deficiency. *J Stem Cell Res Ther* 4(3):181

Kondo, M., Yamato, M., Takagi, R., Namiki, H., Okano, T. (2013). The regulation of epithelial cell proliferation and growth by IL-1 receptor antagonist. *Biomaterials* 34, 121-129.

Tanaka, N., Kondo, M., Uchida, R., Kaneko, M., Sugiyama, H., Yamato, M., Okano, T. (2013). Splitting culture medium by air-jet and rewetting for the assessment of the wettability of cultured epithelial cell surfaces. *Biomaterials* 34, 9082-9088.

Burillon, C., Huot, L., Justin, V., Nataf, S., Chapuis, F., Decullier, E., & Damour, O. (2012) Cultured autologous oral mucosal epithelial cell sheet (CAOMECS) transplantation for the treatment of corneal limbal epithelial stem cell deficiency. *Investigative Ophthalmology & Visual Science*, 53(3), 1325-31.

Ohki, T., Yamamoto, M., Ota, M., Okano, T. & Yamamoto, M. (2011) Application of cell sheet technology for esophageal endoscopic submucosal dissection. *Tech Gastrointest Endosc*, 13(1), 105-109.

Takagi, R., Murakami, D., Kondo, M., Ohki, T., Sasaki, R., Mizutani, M., Yamato, M., Nishida, K., Namiki, H., Yamamoto, M. & Okano, T. (2010) Fabrication of human oral mucosal epithelial cell sheets for treatment of esophageal ulceration by endoscopic submucosal dissection. *Gastrointest Endosc*, 72(6), 1253-1259.

<p>Thepot, A., Morel, A. P., Justin, V., Desanlis, A., Thivillier, L., Hoffman, E., Till, M., Accardi, R., Tommasino, M., Breton, P., Hainaut, P. & Damour, O. (2010) Evaluation of tumorigenic risk of tissue-engineered oral mucosal epithelial cells by using combinational examinations. <i>Cell Transplant</i>, 19(8), 999-1006.</p>
<p>Ohki, T., Yamato, M., Murakami, D., Takagi, R., Yang, J., Namiki, H., Okano, T., and Takasaki, K. (2006). Treatment of oesophageal ulcerations using endoscopic transplantation of tissue-engineered autologous oral mucosal epithelial cell sheets in a canine model. <i>Gut</i> 55, 1704-1710.</p>
<p>Murakami, D., Yamato, M., Nishida, K., Ohki, T., Takagi, R., Yang, J., Namiki, H., and Okano, T. (2006). The effect of micropores in the surface of temperature-responsive culture inserts on the fabrication of transplantable canine oral mucosal epithelial cell sheets. <i>Biomaterials</i> 27, 5518-5523.</p>
<p>Murakami, D., Yamato, M., Nishida, K., Ohki, T., Takagi, R., Yang, J., Namiki, H., and Okano, T. (2006). Fabrication of transplantable human oral mucosal epithelial cell sheets using temperature-responsive culture inserts without feeder layer cells. <i>Journal of artificial organs</i> 9, 185-191.</p>
<p>Hayashida, Y., Nishida, K., Yamato, M., Watanabe, K., Maeda, N., Watanabe, H., Kikuchi, A., Okano, T., and Tano, Y. (2005). Ocular surface reconstruction using autologous rabbit oral mucosal epithelial sheets fabricated ex vivo on a temperature-responsive culture surface. <i>Investigative ophthalmology & visual science</i> 46, 1632-1639.</p>
<p>Nishida, K., Yamato, M., Hayashida, Y., Watanabe, K., Yamamoto, K., Adachi, E., Nagai, S., Kikuchi, A., Maeda, N., Watanabe, H., Okano, T. and Tano, Y. (2004). Corneal reconstruction with tissue-engineered cell sheets composed of autologous oral mucosal epithelium. <i>The New England journal of medicine</i> 351, 1187-1196.</p>

➤ Osteoblasts

Uchiyama, H., Yamato, M., Sasaki, R., Sekine, H., Yang, J., Ogiuchi, H., Ando, T. & Okano, T. (2011) In vivo 3d analysis with micro-computed tomography of rat calvaria bone regeneration using periosteal cell sheets fabricated on temperature-responsive culture dishes. *J Tissue Eng Regen Med*, 5(6), 483-490.

➤ Periodontal ligament

Panduwawala, C., Zhan, X., Dissanayaka, W., Samaranayake, L, Jin, L, Zhang, C. (2016). In vivo periodontal tissue regeneration by periodontal ligament stem cells and endothelial cells in three-dimensional cell sheet constructs. <i>J Periodont Res</i> doi:10.1111/jre.12405
Wei, F., Qu, C., Song, T., Ding, G., Fan, Z., Liu, D., Liu, Y., Zhang, C., Shi, S., Wang, S. (2012). Vitamin C treatment promotes mesenchymal stem cell sheet formation and tissue regeneration by elevating telomerase activity. <i>J Cell Physiol.</i> 227(9), 3216-3224.
Izumi, Y., Aoki, A., Yamada, Y., Kobayashi, H., Iwata, T., Akizuki, T., Suda, T., Nakamura, S., Wara-Aswapati, N., Ueda, M. & Ishikawa, I. (2011) Current and future periodontal tissue engineering. <i>Periodontol 2000</i> , 56(1), 166-187.
Tsumanuma, Y., Iwata, T., Washio, K., Yoshida, T., Yamada, A., Takagi, R., Ohno, T., Lin, K., Yamato, M., Ishikawa, I., Okano, T. & Izumi, Y. (2011) Comparison of different tissue-derived stem cell sheets for periodontal regeneration in a canine 1-wall defect model. <i>Biomaterials</i> , 32(25), 5819-5825.
Huang, S. & Zhang, D. (2010) Periodontal ligament cell sheet engineering: A new possible strategy to promote periodontal regeneration of dental implants. <i>Dental Hypotheses</i> , 1(1), 23-30.
Washio, K., Iwata, T., Mizutani, M., Ando, T., Yamato, M., Okano, T. & Ishikawa, I. (2010) Assessment of cell sheets derived from human periodontal ligament cells: A pre-clinical study. <i>Cell Tissue Res</i> , 341(3), 397-404.
Iwata, T., Yamato, M., Zhang, Z., Mukobata, S., Washio, K., Ando, T., Feijen, J., Okano, T. & Ishikawa, I. (2010) Validation of human periodontal ligament-derived cells as a reliable source for cytotherapeutic use. <i>J Clin Periodontol</i> , 37(12), 1088-1099.
Nakagawa, E., Itoh, T., Yoshie, H. & Satokata, I. (2009) Odontogenic potential of post-natal oral mucosal epithelium. <i>J Dent Res</i> , 88(3), 219-223.
Ishikawa, I., Iwata, T., Washio, K., Okano, T., Nagasawa, T., Iwasaki, K. & Ando, T. (2009) Cell sheet engineering and other novel cell-based approaches to periodontal regeneration. <i>Periodontol 2000</i> , 51, 220-238

Iwata, T., Yamato, M., Tsuchioka, H., Takagi, R., Mukobata, S., Washio, K., Okano, T. & Ishikawa, I. (2009) Periodontal regeneration with multi-layered periodontal ligament-derived cell sheets in a canine model. *Biomaterials*, 30(14), 2716-2723.

Gomez Flores, M., Hasegawa, M., Yamato, M., Takagi, R., Okano, T., and Ishikawa, I. (2008). Cementum-periodontal ligament complex regeneration using the cell sheet technique. *Journal of periodontal research*

Hasegawa, M., Yamato, M., Kikuchi, A., Okano, T., and Ishikawa, I. (2005). Human periodontal ligament cell sheets can regenerate periodontal ligament tissue in an athymic rat model. *Tissue engineering* 11, 469-478.

Akizuki, T., Oda, S., Komaki, M., Tsuchioka, H., Kawakatsu, N., Kikuchi, A., Yamato, M., Okano, T., and Ishikawa, I. (2005). Application of periodontal ligament cell sheet for periodontal regeneration: a pilot study in beagle dogs. *Journal of periodontal research* 40, 245-251.

➤ Peripheral blood mononuclear cells

Burt, T. D., Seu, L., Mold, J. E., Kappas, A. & Mccune, J. M. (2010) Naive human t cells are activated and proliferate in response to the heme oxygenase-1 inhibitor tin mesoporphyrin. *J Immunol*, 185(9), 5279-5288.

➤ Renal cell, MDCK cell

Sekiya, S., Shimizu, T., Yamato, M., Okano, T. (2013). Hormone supplying renal cell sheet in vivo produced by tissue engineering technology. BioResearch Open Access Volume 2 Number1.

Kushida, A., Yamato, M., Isoi, Y., Kikuchi, A., and Okano, T. (2005). A noninvasive transfer system for polarized renal tubule epithelial cell sheets using temperature-responsive culture dishes. European cells & materials 10, 23-30; discussion 23-30.

Kushida, A., Yamato, M., Kikuchi, A., and Okano, T. (2001). Two-dimensional manipulation of differentiated Madin-Darby canine kidney (MDCK) cell sheets: the noninvasive harvest from temperature-responsive culture dishes and transfer to other surfaces. Journal of biomedical materials research 54, 37-46.

Kushida, A., Yamato, M., Konno, C., Kikuchi, A., Sakurai, Y., and Okano, T. (2000). Temperature-responsive culture dishes allow nonenzymatic harvest of differentiated Madin-Darby canine kidney (MDCK) cell sheets. Journal of biomedical materials research 51, 216-223.

➤ Retinal pigment epithelial cell

Yaji, N., Yamato, M., Yang, J., Okano, T. & Hori, S. (2009) Transplantation of tissue-engineered retinal pigment epithelial cell sheets in a rabbit model. *Biomaterials*, 30(5), 797-803.

Kubota, A., Nishida, K., Yamato, M., Yang, J., Kikuchi, A., Okano, T., and Tano, Y. (2006). Transplantable retinal pigment epithelial cell sheets for tissue engineering. *Biomaterials* 27, 3639-3644.

Abe, T., Hojo, M., Saigo, Y., Yamato, M., Okano, T., Wakusawa, R., and Tamai, M. (2006). Retinal pigment epithelial cells from thermally responsive polymer-grafted surface reduce apoptosis. *Advances in experimental medicine and biology* 572, 363-366.

➤ Skeletal myoblast

Kobayashi, M., Haraguchi, Y., Shimizu, T., Mizuuchi, K., Iseki, H. (2015). Real-time, noninvasive optical coherence tomography of cross-sectional living cell-sheets in vitro and in vivo. *J Biomed Mater Res Part B: 103B*, 1267-1273.

Kikuchi, T., Shimizu, T., Wada, M., Yamato, M., Okano, T. (2014). Automatic fabrication of 3-dimensional tissues using cell sheet manipulator technique. *Biomaterials 35*, 2428-2435.

Shudo, Y., Miyagawa, S., Ohkura, H., Fukushima, S., Saito, A., Shiozaki, M., Kawaguchi, N., Matsuura, N., Shimizu, T., Okano, T., Matsuyama, A., Sawa, Y. (2014). Addition of mesenchymal stem cells enhances the therapeutic effects of skeletal myoblast cell-sheet transplantation in a rat ischemic cardiomyopathy model. *TISSUE ENGINEERING: Part A Volume 20, Numbers 3 and 4*.

Terajima, Y., Shimizu, T., Tsuruyama, S., Sekine, H., Ishii, H., Yamazaki, K., Hagiwara, N., Okano, T. (2014). Autologous skeletal myoblast sheet therapy for porcine myocardial infarction without increasing risk of arrhythmia. *Cell Medicine Vol. 6*, 99-109.

Kikuchi, T., Shimizu, T., Wada, M., Yamato, M., Okano, T. (2014). Automatic fabrication of 3-dimensional tissues using cell sheet manipulator technique. *Biomaterials 35*, 2428-2435.

Tadakuma, K., Tanaka, N., Haraguchi, Y., Higashimori, M., Kaneko, M., Shimizu, T., Yamato, M., Okano, T. (2013). A device for the rapid transfer/transplantation of living cell sheets with the absence of cell damage. *Biomaterials 34*, 9018-9025.

Ngo, T., Nagamori, E., Kikuchi, T., Shimizu, T., Okano, T., Taya, M., Kino-oka, M. (2013). Endothelial cell behavior inside myoblast sheets with different thickness. *Biotechnol Lett 35*, 1001-1008.

Shudo, Y., Miyagawa, S., Nakatani, S., Fukushima, S., Sakaguchi, T., Saito, A., Asanuma, T., Kawaguchi, N., Matsuura, N., Shimizu, T., Okano, T., Sawa, Y. (2013). Myocardial layer-specific effect of myoblast cell-sheet implantation evaluated by tissue strain imaging. *Circ J 77*, 1063-1072.

Tadakuma, K., Tanaka, N., Haraguchi, Y., Higashimori, M., Kaneko, M., Shimizu, T., Yamato, M., Okano, T. (2013). A device for the rapid transfer/transplantation of living cell sheets with the absence of cell damage. *Biomaterials 34*, 9018-9025.

<p>Nagamori, E., Ngo, T., Takezawa, Y., Saito, A., Sawa, Y., Shimizu, T., Okano, T., Taya, M., Kino-oka, M. (2012). Network formation through active migration of human vascular endothelial cells in a multilayered skeletal myoblast sheet. <i>Biomaterials</i> 34, 662-668.</p>
<p>Miyagawa, S., Roth, M., Saito, A., Sawa, Y. & Kostin, S. (2011) Tissue-engineered cardiac constructs for cardiac repair. <i>Ann Thorac Surg</i>, 91(1), 320-329.</p>
<p>Miyagawa, S., Saito, A., Sakaguchi, T., Yoshikawa, Y., Yamauchi, T., Imanishi, Y., Kawaguchi, N., Teramoto, N., Matsuura, N., Iida, H., Shimizu, T., Okano, T. & Sawa, Y. (2010) Impaired myocardium regeneration with skeletal cell sheets--a preclinical trial for tissue-engineered regeneration therapy. <i>Transplantation</i>, 90(4), 364-372.</p>
<p>Haraguchi, Y., Sekine, W., Shimizu, T., Yamato, M., Miyoshi, S., Umezawa, A. & Okano, T. (2010) Development of a new assay system for evaluating the permeability of various substances through three-dimensional tissue. <i>Tissue Eng Part C Methods</i>, 16(4), 685-692.</p>
<p>Hoashi, T., Matsumiya, G., Miyagawa, S., Ichikawa, H., Ueno, T., Ono, M., Saito, A., Shimizu, T., Okano, T., Kawaguchi, N., Matsuura, N. & Sawa, Y. (2009) Skeletal myoblast sheet transplantation improves the diastolic function of a pressure-overloaded right heart. <i>J Thorac Cardiovasc Surg</i>, 138(2), 460-467.</p>
<p>Kondoh, H., Sawa, Y., Miyagawa, S., Sakakida-Kitagawa, S., Memon, I.A., Kawaguchi, N., Matsuura, N., Shimizu, T., Okano, T., and Matsuda, H. (2006). Longer preservation of cardiac performance by sheet-shaped myoblast implantation in dilated cardiomyopathic hamsters. <i>Cardiovascular research</i> 69, 466-475.</p>
<p>Hata, H., Matsumiya, G., Miyagawa, S., Kondoh, H., Kawaguchi, N., Matsuura, N., Shimizu, T., Okano, T., Matsuda, H., and Sawa, Y. (2006). Grafted skeletal myoblast sheets attenuate myocardial remodeling in pacing-induced canine heart failure model. <i>The Journal of thoracic and cardiovascular surgery</i> 132, 918-924.</p>
<p>Memon, I.A., Sawa, Y., Fukushima, N., Matsumiya, G., Miyagawa, S., Taketani, S., Sakakida, S.K., Kondoh, H., Aleshin, A.N., Shimizu, T., Okano, T. and Matsuda, H. (2005). Repair of impaired myocardium by means of implantation of engineered autologous myoblast sheets. <i>The Journal of thoracic and cardiovascular surgery</i> 130, 1333-1341.</p>

➤ Smooth muscle cell

Talab, S., Kajbafzadeh, A., Elmi, A., Tourchi, A., Sabetkish, S., Sabetkish, N., Monajemzadeh, M. (2014). Bladder reconstruction using scaffold-less autologous smooth muscle cell sheet engineering: early histological outcomes for autoaugmentation cystoplasty. *BJU Int* 114, 937-945.

Shudo, Y., Cohen, J., MacArthur, J., Atluri, P., Hsiao, P., Yang, E., Fairman, A., Trubelja, A., Patel, J., Miyagawa, S., Sawa, Y., Woo, Y. (2013). Spatially oriented, temporally sequential smooth muscle cell-endothelial progenitor cell bi-level cell sheet neovascularizes ischemic myocardium. *Circulation* 128, 59-68.

Hobo, K., Shimizu, T., Sekine, H., Shin'oka, T., Okano, T., and Kurosawa, H. (2008). Therapeutic Angiogenesis Using Tissue Engineered Human Smooth Muscle Cell Sheets. *Arteriosclerosis, thrombosis, and vascular biology* 28, 637-643.

➤ Synoviocyte

Yokoyama, M., Sato, M., Umezawa, A., Mitani, G., Takagaki, T., Yokoyama, M., Kawake, T., Okada, E., Kokubo, M., Ito, N., Takaku, Y., Murai, K., Matoba, R., Akutsu, H., Yamato, M., Okano, T., Mochida, J. (2016). Assessment of the safety of chondrocyte sheet implantation for cartilage regeneration. *TISSUE ENGINEERING Part C* Volume 22 Number 1.

Takaku, Y., Murai, K., Ukai, T., Ito, S., Kokubo, M., Satoh, M., Kobayashi, E., Yamato, M., Okano, T., Takeuchi, M., Mochida, J., Sato, M. (2014). In vivo cell tracking by bioluminescence imaging after transplantation of bioengineered cell sheets to the knee joint. *Biomaterials* 35, 2199-2206.

➤ Tendon derived stem/progenitor cell(TSC)

Komatsu, I., Wang, J., Iwasaki, K., Shimizu, T., Okano, T. (2016). The effect of tendon stem/ progenitor cell (TSC) sheet on the early tendon healing in a rat achilles tendon injury model. *Acta Biomaterialia* 42, 136-146.

➤ Thyroid

Arauchi, A., Shimizu, T., Yamato, M., Obara, T. & Okano, T. (2009) Tissue-engineered thyroid cell sheet rescued hypothyroidism in rat models after receiving total thyroidectomy comparing with nontransplantation models. *Tissue Eng Part A*, 15(12), 3943-3949.

➤ Urothelial cell

Shiroyanagi, Y., Yamato, M., Yamazaki, Y., Toma, H., and Okano, T. (2004). Urothelium regeneration using viable cultured urothelial cell sheets grafted on demucosalized gastric flaps. *BJU international* 93, 1069-1075.

Shiroyanagi, Y., Yamato, M., Yamazaki, Y., Toma, H., and Okano, T. (2003). Transplantable urothelial cell sheets harvested noninvasively from temperature-responsive culture surfaces by reducing temperature. *Tissue engineering* 9, 1005-1012.

➤ Vein endothelial cells

Sugibayashi, K., Kumashiro, Y., Shimizu, T., Kobayashi, J., Okano, T. (2012). A molded hyaluronic acid gel as a micro-template for blood capillaries. *Journal of Biomaterials Sciences, Polymer Edition*, 24:2, 135-147.

Sekiya, S., Shimizu, T., Yamato, M. & Okano, T. (2011) "Deep-media culture condition"; Promoted lumen formation of endothelial cells within engineered three-dimensional tissues in vitro. *J Artif Organs*, 14(1), 43-51.

Sekiya, S., Muraoka, M., Sasagawa, T., Shimizu, T., Yamato, M. & Okano, T. (2010) Three-dimensional cell-dense constructs containing endothelial cell-networks are an effective tool for in vivo and in vitro vascular biology research. *Microvasc Res*, 80(3), 549-551.

Asakawa, N., Shimizu, T., Tsuda, Y., Sekiya, S., Sasagawa, T., Yamato, M., Fukai, F. & Okano, T. (2010) Pre-vascularization of in vitro three-dimensional tissues created by cell sheet engineering. *Biomaterials*, 31(14), 3903-3909.

Ohno, M., Motojima, K., Okano, T. & Taniguchi, A. (2008) Up-regulation of drug-metabolizing enzyme genes in layered co-culture of a human liver cell line and endothelial cells. *Tissue Eng Part A*, 14(11), 1861-1869.

➤ Review

Moschouris, K., Firoozi, N., Kang, Y. (2016). The application of cell sheet engineering in the vascularization of tissue regeneration. <i>Regen. Med.</i> 11(6), 559-570.
Masuda, S., Shimizu, T. (2016). Three-dimensional cardiac tissue fabrication based on cell sheet technology. <i>Advanced Drug Delivery Reviews</i> 96, 103-109.
Takahashi, H., Okano, T. (2015). Cell sheet-based tissue engineering for organizing anisotropic tissue constructs produced using microfabricated thermoresponsive substrates. <i>Adv. Healthcare Mater.</i> 4, 2388-2407.
Egami, M., Haraguchi, Y., Shimizu, T., Yamato, M., Okano, T. (2014). Latest status of the clinical and industrial applications of cell sheet engineering and regenerative medicine. <i>Arch. Pharm. Res.</i> 37, 96-106.
Sato, M., Yamato, M., Hamahashi, K., Okano, T., Mochida, J. (2014). Articular cartilage regeneration using cell sheet technology. <i>THE ANATOMICAL RECORD</i> 297, 36-43.
Iwata, T., Yamato, M., Ishikawa, I., Ando, T., Okano, T. (2014). Tissue engineering in periodontal tissue. <i>THE ANATOMICAL RECORD</i> 297, 16-25.
Okano, T., Dezawa, M. (2014). A New age of regenerative medicine: fusion of tissue engineering and stem cell research. <i>THE ANATOMICAL RECORD</i> 297, 4-5.
Owaki, T., Shimizu, T., Yamato, M., Okano, T. (2014). Cell sheet engineering for regenerative medicine: current challenges and strategies. <i>Biotechnol. J.</i> 9, 904-914.
Kobayashi, J., Okano, T. (2013). Thermoresponsive thin hydrogel-grafted surfaces for biomedical applications. <i>Reactive & Functional Polymers</i> , 73 939-944.
Sakai, Y., Koike, M., Hasegawa, H., Yamanouchi, K., Soyama, A., Takatsuki, M., Kuroki, T., Ohashi, K., Okano, T., Eguchi, S. (2013). Rapid fabricating technique for multi-layered human hepatic cell sheets by forceful contraction of the fibroblast monolayer. <i>PLoS ONE</i> 8(7):e70970.
Matsuura, K., Haraguchi, Y., Shimizu, T., Okano, T. (2013). Cell sheet transplantation for heart tissue repair. <i>Journal of Controlled Release</i> 169, 336-340.

Arisaka, Y., Kobayashi, J., Yamato, M., Akiyama, Y., Okano, T. (2013). Heparin-functionalized thermoresponsive surface. <i>Organogenesis</i> 9:3, 1-3.
Umemoto, T., Yamato, M., Nishida, K., Okano, T. (2012). Regenerative medicine of cornea by cell sheet engineering using temperature-responsive culture surfaces. <i>Chin Sci Bull</i> .
Dutta, R. C. & Dutta, A. K. (2010) Comprehension of ecm-cell dynamics: A prerequisite for tissue regeneration. <i>Biotechnol Adv</i> , 28(6), 764-769.
Dutta, R. C. & Dutta, A. K. (2010) Comprehension of ecm-cell dynamics: A prerequisite for tissue regeneration. <i>Biotechnol Adv</i> , 28(6), 764-769.
Elloumi-Hannachi, I., Yamato, M., and Okano, T. (2010) Cell sheet engineering: a unique nanotechnology for scaffold-free Tissue reconstruction with clinical applications in regenerative medicine. <i>J Inten Med</i> 267 (1),54-70.
Itoga, K. & Okano, T. (2010) The high functionalization of temperature-responsive culture dishes for establishing advanced cell sheet engineering. <i>J Mater Chem</i> , 20(40), 8768-8775.
Yang, J., Yamato, M., Shimizu, T., Sekine, H., Ohashi, K., Kanzaki, M., Ohki, T., Nishida, K., and Okano, T. (2007). Reconstruction of functional tissues with cell sheet engineering. <i>Biomaterials</i> 28, 5033-5043.
Yang, J., Yamato, M., Nishida, K., Ohki, T., Kanzaki, M., Sekine, H., Shimizu, T., and Okano, T. (2006). Cell delivery in regenerative medicine: the cell sheet engineering approach. <i>Journal of controlled release</i> 116, 193-203.
Yang, J., Yamato, M., Nishida, K., Hayashida, Y., Shimizu, T., Kikuchi, A., Tano, Y., and Okano, T. (2006). Corneal epithelial stem cell delivery using cell sheet engineering: not lost in transplantation. <i>Journal of drug targeting</i> 14, 471-482.

- RepCell™

Wang, X., Hisha, H., Mizokami, T., Cui, W., Cui, Y., Shi, A., Song, C., Okazaki, S., Li, Q., Feng, W., Kato, J. & Ikehara, S. (2010) Mouse mesenchymal stem cells can support human hematopoiesis both in vitro and in vivo: The crucial role of neural cell adhesion molecule. *Haematologica*, 95(6), 884-891.

Ulmann, L., Hirbec, H. & Rassendren, F. (2010) P2x4 receptors mediate pge2 release by tissue-resident macrophages and initiate inflammatory pain. *Embo J*, 29(14), 2290-2300.

Ohsawa, K., Irino, Y., Sanagi, T., Nakamura, Y., Suzuki, E., Inoue, K. & Kohsaka, S. (2010) P2y12 receptor-mediated integrin-beta1 activation regulates microglial process extension induced by atp. *Glia*, 58(7), 790-801.

Naito, M., Harumi, T. & Kuwana, T. (2010) Long term in vitro culture of chicken primordial germ cells isolated from embryonic blood and incorporation into germline of recipient embryo. *J Poult Sci*, 47(1), 57-64.

Matsuyama, Y., Okazaki, H., Tamemoto, H., Kimura, H., Kamata, Y., Nagatani, K., Nagashima, T., Hayakawa, M., Iwamoto, M., Yoshio, T., Tominaga, S. & Minota, S. (2010) Increased levels of interleukin 33 in sera and synovial fluid from patients with active rheumatoid arthritis. *J Rheumatol*, 37(1), 18-25.

Ii, M. (2010) Bone marrow-derived endothelial progenitor cells: Isolation and characterization for myocardial repair. *Methods Mol Biol*, 660, 9-27.

Ishii K., Fumoto T., Iwai K., Takeshita S., Ito M., Shimohata N., Aburatani H., Taketani S., Lelliott C.J., Vidal-Puig A. and Ikeda K.(2009)Coordination of PGC-1 and iron uptake in mitochondrial biogenesis and osteoclast activation. *Nature Med* 15, 259-266.

Guo, Y., Zhao, G., Tanaka, S. & Yamaguchi, T. (2009) Differential responses between monocytes and monocyte-derived macrophages for lipopolysaccharide stimulation of calves. *Cell Mol Immunol*, 6(3), 223-229.

Guo, Y., Zhao, G., Huo, Y., Tanaka, S., Aso, H. & Yamaguchi, T. (2009) The tlr expression pattern on monocyte-derived macrophages for lipopolysaccharid stimulation of calves. *Agric Sci Chin*, 8(7), 864-871.

Guo, Y., Tanaka, S. & Zhao, G. (2009) Toll-like receptor expression pattern in bovine monocytes-derived macrophages and the influence by lipopolysaccharid stimulation. *Chin J Immunol*, 25(7), 638-640.

McNulty, A.K., Schmidt, M., Feeley, T., and Kieswetter, K. (2007). Effects of negative pressure wound therapy on fibroblast viability, chemotactic signaling, and proliferation in a provisional wound (fibrin) matrix. <i>Wound Repair Regen</i> 15, 838-846.
Yanase, Y., Suzuki, H., Tsutsui, T., Uechi, I., Hiragun, T., Mihara, S., and Hide, M. (2007). Living cell positioning on the surface of gold film for SPR analysis. <i>Biosensors & bioelectronics</i> 23, 562-567.
Butts, C.L., Shukair, S.A., Duncan, K.M., Harris, C.W., Belyavskaya, E., and Sternberg, E.M. (2007). Effects of dexamethasone on rat dendritic cell function. <i>Hormone and metabolic research Hormon- und Stoffwechselforschung</i> 39, 404-412.
Butts, C.L., Shukair, S.A., Duncan, K.M., Bowers, E., Horn, C., Belyavskaya, E., Tonelli, L., and Sternberg, E.M. (2007). Progesterone inhibits mature rat dendritic cells in a receptor-mediated fashion. <i>International immunology</i> 19, 287-296.
Alabraba, E.B., Curbishley, S.M., Lai, W.K., Wigmore, S.J., Adams, D.H., and Afford, S.C. (2007). A new approach to isolation and culture of human Kupffer cells. <i>J Immunol Methods</i> 326, 139-144.
Gordon, I.O., and Freedman, R.S. (2006). Defective antitumor function of monocyte-derived macrophages from epithelial ovarian cancer patients. <i>Clin Cancer Res</i> 12, 1515-1524.

- HydroCell®

Kojima, N., Kato, C., Igarashi, M., and Ishii, M.(2011) Development of peritoneal macrophage along a dendritic cell lineage in response to uptake of oligomannose-coated liposomes. <i>Cell Immunol</i> In Press, Accepted Manuscript
Yoshida, Y., Tsunoda, T., Doi, K., Tanaka, Y., Fujimoto, T., Machida, T., Ota, T., Koyanagi, M., Takashima, Y. & Sasazuki, T. (2011) Kras-mediated up-regulation of rrm2 expression is essential for the proliferation of colorectal cancer cell lines. <i>Anticancer Res</i> , 31(7), 2535-2539.
Tan, S. L., Sulaiman, S., Pinguan-Murphy, B., Selvaratnam, L., Tai, C. C. & Kamarul, T. (2011) Human amnion as a novel cell delivery vehicle for chondrogenic mesenchymal stem cells. <i>Cell Tissue Bank</i> , 12(1), 59-70.
Ito, K., Nakamura, H. & Watanabe, Y. (2011) Protogenin mediates cell adhesion for ingression and re-epithelialization of paraxial mesodermal cells. <i>Dev Biol</i> , 351(1), 13-24.
Ishii, M., Kato, C., Hakamata, A. & Kojima, N. (2011) Targeting with oligomannose-coated liposomes promotes maturation and splenic trafficking of dendritic cells in the peritoneal cavity. <i>Int Immunopharmacol</i> , 11(2), 164-171.
Yanase, Y., Hiragun, T., Kaneko, S., Gould, H. J., Greaves, M. W. & Hide, M. (2010) Detection of refractive index changes in individual living cells by means of surface plasmon resonance imaging. <i>Biosens Bioelectron</i> , 26(2), 674-681.
Yanase, Y., Araki, A., Suzuki, H., Tsutsui, T., Kimura, T., Okamoto, K., Nakatani, T., Hiragun, T. & Hide, M. (2010) Development of an optical fiber spr sensor for living cell activation. <i>Biosens Bioelectron</i> , 25(5), 1244-1247.
Yamamoto, N., Tanikawa, A. & Horiguchi, M. (2010) Basic study of retinal stem/progenitor cell separation from mouse iris tissue. <i>Med Mol Morphol</i> , 43(3), 139-144.
Shimoji, K., Yuasa, S., Onizuka, T., Hattori, F., Tanaka, T., Hara, M., Ohno, Y., Chen, H., Egasgira, T., Seki, T., Yae, K., Koshimizu, U., Ogawa, S. & Fukuda, K. (2010) G-csf promotes the proliferation of developing cardiomyocytes in vivo and in derivation from escs and ipscs. <i>Cell Stem Cell</i> , 6(3), 227-237.

<p>Okura, H., Komoda, H., Saga, A., Kakuta-Yamamoto, A., Hamada, Y., Fumimoto, Y., Lee, C. M., Ichinose, A., Sawa, Y. & Matsuyama, A. (2010) Properties of hepatocyte-like cell clusters from human adipose tissue-derived mesenchymal stem cells. <i>Tissue Eng Part C Methods</i>, 16(4), 761-770.</p>
<p>Kitamura, Y., Kimiwada, T., Maruyama, J., Kaburagi, T., Matsumoto, T. & Wada, K. (2010) Monte carlo-based mouse nuclear receptor superfamily gene regulatory network prediction: Stochastic dynamical system on graph with zipf prior. <i>IPSI Transactions on Bioinformatics</i>, 3(0), 24-39.</p>
<p>Joo, D. J., Kim, J. Y., Lee, J. I., Jeong, J. H., Cho, Y., Ju, M. K., Huh, K. H., Kim, M. S. & Kim, Y. S. (2010) Manufacturing of insulin-secreting spheroids with the rin-5f cell line using a shaking culture method. <i>Transplant Proc</i>, 42(10), 4225-4227.</p>
<p>Jeong, J. H., Lee, J. I., Ju, M. K., Joo, D. J., Huh, K. H., Kim, M. S., Kim, J. Y., Cho, Y. & Kim, Y. S. (2010) Proliferation of pancreatic endocrine cells using disaggregation-expansion-reaggregation technology in isolated rat islets. <i>Transplant Proc</i>, 42(3), 907-910.</p>
<p>Hargett, D. & Shenk, T. E. (2010) Experimental human cytomegalovirus latency in cd14+ monocytes. <i>Proc Natl Acad Sci U S A</i>, 107(46), 20039-20044.</p>
<p>Choi, I. K., Lee, Y. S., Yoo, J. Y., Yoon, A. R., Kim, H., Kim, D. S., Seidler, D. G., Kim, J. H. & Yun, C. O. (2010) Effect of decorin on overcoming the extracellular matrix barrier for oncolytic virotherapy. <i>Gene Ther</i>, 17(2), 190-201.</p>
<p>Bhise, N. S., Gray, R. S., Sunshine, J. C., Htet, S., Ewald, A. J. & Green, J. J. (2010) The relationship between terminal functionalization and molecular weight of a gene delivery polymer and transfection efficacy in mammary epithelial 2-d cultures and 3-d organotypic cultures. <i>Biomaterials</i>, 31(31), 8088-8096.</p>
<p>Okura, H., Komoda, H., Fumimoto, Y., Lee, C. M., Nishida, T., Sawa, Y. & Matsuyama, A. (2009) Transdifferentiation of human adipose tissue-derived stromal cells into insulin-producing clusters. <i>Journal of Artificial Organs</i>, 12(2), 123-130.</p>

<p>Notani, T., Tabata, M. J., Iseki, H., Baba, O. & Takano, Y. (2009) Introduction of a three-dimensional and layered (tdl) culture, a novel primary co-culture method for ameloblasts and pulp-derived cells. <i>Archives of Histology and Cytology</i>, 72(3), 187-198.</p>
<p>Nakahara, M., Nakamura, N., Matsuyama, S., Yogiashi, Y., Yasuda, K., Kondo, Y., Yuo, A. & Saeki, K. (2009) High-efficiency production of subculturable vascular endothelial cells from feeder-free human embryonic stem cells without cell-sorting technique. <i>Cloning and Stem Cells</i>, 11(4), 509-522</p>
<p>Kimiwada, T., Sakurai, M., Ohashi, H., Aoki, S., Tominaga, T. & Wada, K. (2009) Clock genes regulate neurogenic transcription factors, including neurod1, and the neuronal differentiation of adult neural stem/progenitor cells. <i>Neurochem Int</i>, 54(5-6), 277-285.</p>
<p>Huh, K. H., Lee, J. I., Kim, J. Y., Jeong, J. H., Fang, Y., Park, Y. J., Kang, C. M. & Kim, Y. S. (2009) Functional improvement of pig islet with exocrine encapsulation. <i>Transplant Proc</i>, 41(1), 323-325.</p>
<p>Yun, C. O., Kim, J. H., Choi, I. K., Lee, Y. S., Yoo, J. Y., Yoon, A. R., Kim, H. & Seidler, D. G. (2008) Markedly enhanced intratumoral spread and antitumor effect of oncolytic adenovirus expressing decorin. <i>Nature Precedings</i>.</p>
<p>Sasaki, R., Aoki, S., Yamato, M., Uchiyama, H., Wada, K., Okano, T., and Ogiuchi, H. (2008). Neurosphere generation from dental pulp of adult rat incisor. <i>The European journal of neuroscience</i> 27, 538-548.</p>
<p>Takagi, H., Furuya, N. & Kojima, N. (2007) Preferential production of il-12 by peritoneal macrophages activated by liposomes prepared from neoglycolipids containing oligomannose residues. <i>Cytokine</i>, 40(3), 241-250.</p>
<p>Yanase, Y., Suzuki, H., Tsutsui, T., Uechi, I., Hiragun, T., Mihara, S., and Hide, M. (2007). Living cell positioning on the surface of gold film for SPR analysis. <i>Biosensors & bioelectronics</i> 23, 562-567.</p>
<p>Kubota, A., Nishida, K., Nakashima, K. & Tano, Y. (2006) Conversion of mammalian muller glial cells into a neuronal lineage by in vitro aggregate-culture. <i>Biochem Biophys Res Commun</i>, 351(2), 514-520.</p>

Moriguchi, T., Hamada, M., Morito, N., Terunuma, T., Hasegawa, K., Zhang, C., Yokomizo, T., Esaki, R., Kuroda, E., Yoh, K., Kudo, T., Nagata, M., Greaves, D. R., Engel, J. D., Yamamoto, M. & Takahashi, S. (2006) Mafb is essential for renal development and f4/80 expression in macrophages. *Mol Cell Biol*, 26(15), 5715-5727.

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E.A. Jähne, D.E. Eigenmann, Ch. Sampath, V. Butterweck, M. Culot, R. Cecchelli, F. Gosselet, F.R. Walter, M.A. Deli, M. Smieško, M. Hamburger, M. Oufir (2016) Pharmacokinetics and in vitro blood-brain barrier screening of the plant-derived alkaloid tryptanthrin. *Planta Med.* 82, 1021.

Á. Nyúl-Tóth, M. Suciú, J. Molnár, C. Fazakas, J. Haskó, H. Herman, A.E. Farkas, J. Kaszaki, A. Hermenean, I. Wilhelm, I.A. Krizbai (2016) Differences in the molecular structure of the blood-brain barrier in the cerebral cortex and white matter: an in silico, in vitro and ex vivo study. *Am. J. Physiol.* 310, H1702.

D.E. Eigenmann, C. Dürig, E.A. Jähne, M. Smieško, M. Culot, F. Gosselet, R. Cecchelli, H.Ch.C. Helms, B. Brodin, L. Wimmer, M.D. Mihovilovic, M. Hamburger, M. Oufir (2016) In vitro blood-brain barrier permeability predictions for GABAA receptor modulating piperine analogs. *Eur. J. Pharm. Biopharm.* 103, 118.

S.E. Storck, S. Meister, J. Nahrath, J.N. Meißner, N. Schubert, A. Di Spiezio, S. Baches, R.E. Vandenbroucke, Y. Bouter, I. Prikulis, C. Korth, S. Weggen, A. Heimann, M. Schwaninger, T.A. Bayer, C.U. Pietrzik (2016) Endothelial LRP1 transports amyloid- β 1-42 across the blood-brain barrier. *J. Clin. Invest.* 126, 123.

J.H. Lee, A. Sahu, W.I. Choi, J.Y. Lee, G. Tae (2016) ZOT-derived peptide and chitosan functionalized nanocarrier for oral delivery of protein drug. *Biomaterials* 103, 160.

N. Ziegler, K. Awwad, B. Fisslthaler, M. Reis, K. Devraj, M. Corada, S.P. Minardi, E. Dejana, K.H. Plate, I. Fleming, S. Liebner (2016) β -Catenin is required for endothelial Cyp1b1 regulation influencing metabolic barrier function. *J. Neurosci.* 36, 8921.

F. Moradi-Afrapoli, M. Oufir, F.R. Walter, M.A. Deli, M. Smiesko, V. Zabela, V. Butterweck, M. Hamburger (2016) Validation of UHPLC-MS/MS methods for the determination of kaempferol and its metabolite 4-hydroxyphenyl acetic acid, and application to in vitro blood-brain barrier and intestinal drug permeability studies. *J. Pharm. Biomed. Anal.* 128, 264.

<p>K. Göbel, S. Pankratz, Ch.-M. Asaridou, A.M. Herrmann, S. Bittner, M. Merker, T. Ruck, S. Glumm, F. Langhauser, P. Kraft, T.F. Krug, J. Breuer, M. Herold, C.C. Gross, D. Beckmann, A. Korb-Pap, M.K. Schuhmann, S. Kuerten, I. Mitroulis, C. Ruppert, M.W. Nolte, C. Panousis, L. Klotz, B. Kehrel, T. Korn, H.F. Langer, T. Pap, B. Nieswandt, H. Wiendl, T. Chavakis, Ch. Kleinschnitz, S.G. Meuth (2016) Blood coagulation factor XII drives adaptive immunity during neuroinflammation via CD87-mediated modulation of dendritic cells. <i>Nat. Commun.</i> 7, 11626.</p>
<p>J. Stab, I. Zlatev, B. Raudszus, S. Meister, C.U. Pietrzik, K. Langer, H. von Briesen, S. Wagner (2016) Flurbiprofen-loaded nanoparticles can cross a primary porcine in vitro blood-brain barrier model to reduce amyloid-β42 Burden. <i>J. Nanomed. Biother. Discovery</i> 6, 1000140.</p>
<p>J. Teichmann, M. Nitschke, D. Pette, M. Valtink, S. Gramm, F.V. Härtel, T. Noll, R.H.W. Funk, K. Engelmann, C. Werner (2016) Thermo-responsive cell culture carriers based on poly(vinyl methyl ether)-the effect of biomolecular ligands to balance cell adhesion and stimulated detachment. <i>Sci. Technol. Adv. Mater.</i> 16, 045003.</p>
<p>S. Dembla, N. Hasan, A. Becker, A. Beck, S.E. Philipp (2016) Transient receptor potential A1 channels regulate epithelial cell barriers formed by MDCK cells. <i>FEBS Lett.</i> 590, 1509.</p>
<p>J. Wisniewska-Kruk, A.-E. van der Wijk, H.A. van Veen, T.G.M.F. Gorgels, I.M.C. Vogels, D. Versteeg, C.J.F. Van Noorden, R.O. Schlingemann, I. Klaassen (2016) Plasmalemma vesicle-associated protein has a key role in blood-retinal barrier loss. <i>Am. J. Pathol.</i> 186, 1044.</p>
<p>S. Gurnik, K. Devraj, J. Macas, M. Yamaji, J. Starke, A. Scholz, K. Sommer, M. Di Tacchio, R. Vutukuri, H. Beck, M. Mittelbronn, C. Foerch, W. Pfeilschifter, S. Liebner, K.G. Peters, K.H. Plate, Y. Reiss (2016) Angiopoietin-2-induced blood-brain barrier compromise and increased stroke size are rescued by VE-PTP-dependent restoration of Tie2 signaling. <i>Acta Neuropathol.</i> 131, 753 .</p>
<p>I. Lazarevic, B. Engelhardt (2016) Modeling immune functions of the mouse blood-cerebrospinal fluid barrier in vitro: primary rather than immortalized mouse choroid plexus epithelial cells are suited to study immune cell migration across this brain barrier. <i>Fluids Barriers CNS</i> 13, 2.</p>

<p>N. Varga, E. Csapó, Z. Majláth, I. Ilisz, I.A. Krizbai, I. Wilhelm, L. Knapp, J. Toldi, L. Vécsei, I. Dékány (2016) Targeting of the kynurenic acid across the blood-brain barrier by core-shell nanoparticles. <i>Eur. J. Pharm. Sci.</i> 86, 67.</p>
<p>H.C. Mirsepasi-Lauridsen, Z. Du, C. Struve, G. Charbon, J. Karczewski, K.A. Krogfelt, A.M. Petersen, J.M. Wells (2016) Secretion of alpha-hemolysin by <i>Escherichia coli</i> disrupts tight junctions in ulcerative colitis patients. <i>Clin. Transl. Gastroenterol.</i> 7, e149.</p>
<p>P.G. Sreekumar, K. Ishikawa, C.S., H.H. Mehta, J. Wan, K. Yen, P. Cohen, R. Kannan, D.R. Hinton (2016) The Mitochondrial-Derived Peptide Humanin Protects RPE Cells From Oxidative Stress, Senescence, and Mitochondrial Dysfunction. <i>Invest. Ophthalmol. Visual Sci.</i> 57, 1238.</p>
<p>M. Kaiser, S.Chalapala, C. Gorzelanny, R.S. Perali, F.M. Goycoolea (2016) The effect of capsaicin derivatives on tight-junction integrity and permeability of Madin-Darby canine kidney cells. <i>J. Pharm. Sci.</i> 105, 630.</p>
<p>K. Valere, A. Rapista, E. Eugenin, W. Lu, T.L. Chang (2016) Human alpha-defensin HNP1 increases HIV traversal of the epithelial barrier: A potential role in STI-Mediated enhancement of HIV transmission. <i>Viral Immunol.</i> 28, 609.</p>
<p>D.E. Eigenmann, E.A. Jähne, M. Smieško, M. Hamburger, M. Oufir (2016) Validation of an immortalized human (hBMEC) in vitro blood-brain barrier model. <i>Anal. Bioanal. Chem.</i> 408, 2095.</p>
<p>J. Rivnay, P. Leleux, A. Hama, M. Ramuz, M. Huerta, G.G. Malliaras, R.M. Owens (2015) Using white noise to gate organic transistors for dynamic monitoring of cultured cell layers. <i>Sci. Rep.</i> 5, 11613.</p>
<p>S.E. Herberich, R. Klose, I. Moll, W.-J. Yang, J. Wüsthube-Lausch, A. Fischer (2015) ANKS1B interacts with the cerebral cavernous malformation protein-1 and controls endothelial permeability but not sprouting angiogenesis. <i>PLoS One</i> 10, e0145304.</p>
<p>K. Tsuyoshi, K. Masuo, K. Daisuke, I. Tatsuya, K. Yasutoshi, I. Masafumi, K. Takayuki, K. Takumi, F. Tomohisa, S. Norimasa, H. Koichi, K. Takashi (2015) Claudin-4 binder C-CPE 194 enhances effects of anticancer agents on pancreatic cancer cell lines via a MAPK pathway. <i>Pharmacol. Res. Perspect.</i> 3, e00196.</p>

I.M. Smith, A. Baker, N. Arneborg, L. Jespersen (2015) Non-Saccharomyces yeasts protect against epithelial cell barrier disruption induced by Salmonella enterica subsp. enterica serovar Typhimurium. <i>Lett. Appl. Microbiol.</i> 61, 491.
A. Bernd, M. Ott, H. Ishikawa, H. Schroten, C. Schwerk, G. Fricker (2015) Characterization of efflux transport proteins of the human choroid plexus papilloma cell line HIBCPP, a functional in vitro model of the blood-cerebrospinal fluid barrier. <i>Pharm. Res.</i> 32, 2973.
S. Meister, S. Storck, E. Hameister, C. Behl, S. Weggen, A. Clement, C. Pietrzik (2015) Expression of the ALS-causing variant hSOD1G93A leads to an impaired integrity and altered regulation of claudin-5 expression in an in vitro blood-spinal cord barrier model. <i>J. Cereb. Blood Flow Metab.</i> 35, 1112.
U. Linz, M. Hupert, B. Santiago-Schübel, S. Wien, J. Stab, S. Wagner (2015) Transport of treosulfan and temozolomide across an in-vitro blood-brain barrier model. <i>Anticancer Drugs</i> 26, 728.
S. Meyer, G. Raber, F. Ebert, M.S. Taleshi, K.A. Francesconi, T. Schwerdtle (2015) Arsenic-containing hydrocarbons and arsenic-containing fatty acids: Transfer across and presystemic metabolism in the Caco-2 intestinal barrier model. <i>Mol. Nutr. Food Res.</i> 59, 2044.
R. Miyata, K. Nomura, T. Kakuki, K. Takano, T. Kohno, T. Konno, N. Sawada, T. Himi, T. Kojima (2015) Irsogladine maleate regulates gap junctional intercellular communication-dependent epithelial barrier in human nasal epithelial Cells. <i>J. Membr. Biol.</i> 248, 327.
J. Teichmann, M. Nitschke, D. Pette, M. Valtink, S. Gramm, F.V. Härtel, T. Noll, R.H.W. Funk, K. Engelmann, C. Werner (2015) Thermo-responsive cell culture carriers based on poly(vinyl methyl ether)-the effect of biomolecular ligands to balance cell adhesion and stimulated detachment. <i>Sci. Technol. Adv. Mater.</i> 16, 045003.
I.A. Krizbai, Á. Gasparics, P. Nagyoszi, C. Fazakas, J. Molnár, I. Wilhelm, R. Bencs, L. Rosivall, A. Sebe (2015) Endothelial-Mesenchymal Transition of Brain Endothelial Cells: Possible Role during Metastatic Extravasation. <i>PLoS One</i> 10, e0123845.
H. Lohren, J. Bornhorst, H.J. Galla, T. Schwerdtle (2015) The blood-cerebrospinal fluid barrier - first evidence for an active transport of organic mercury compounds out of the brain. <i>Metallomics</i> 7, 1420.

A. Wolff, M. Antfolk, B. Brodin, M. Tenje (2015) In vitro blood-brain barrier models-An overview of established models and new microfluidic approaches. <i>J. Pharm. Sci.</i> 104, 2727.
J. Rivnay, M. Ramuz, P. Leleux, A. Hama, M. Huerta, R.M. Owens (2015) Organic electrochemical transistors for cell-based impedance sensing. <i>Appl. Phys. Lett.</i> 106, 043301.
C. Staat, C. Coisne, S. Dabrowski, S.M. Stamatovic, A.V. Andjelkovic, H. Wolburg, B. Engelhardt, I.E. Blasig (2015) Mode of action of claudin peptidomimetics in the transient opening of cellular tight junction barriers. <i>Biomaterials</i> 54, 9.
M. Abadier, J. Haghayegh Jahromi, L. Cardoso Alves, R. Boscacci, D. Vestweber, S. Barnum, U. Deutsch, B. Engelhardt, R. Lyck (2015) Cell surface levels of endothelial ICAM-1 influence the transcellular or paracellular T-cell diapedesis across the blood-brain barrier. <i>Eur. J. Immunol.</i> 45, 1043.
M. Kaiser, S. Pereira, L. Pohl, S. Ketelhut, B. Kemper, C. Gorzelanny, H.J. Galla, B. M. Moerschbacher, F.M. Goycoolea (2015) Chitosan encapsulation modulates the effect of capsaicin on the tight junctions of MDCK cells. <i>Sci. Rep.</i> 5, 10048.
M. Sakurai-Yageta, T. Maruyama, T. Suzuki, K. Ichikawa, Y. Murakami (2015) Dynamic regulation of a cell adhesion protein complex including CADM1 by combinatorial analysis of FRAP with exponential curve-fitting. <i>PLoS One</i> 10, e0116637.
D. Ulluwishewa, R.C. Anderson, W. Young, W.C. McNabb, P. van Baarlen, P.J. Moughan, J.M. Wells, N.C. Roy (2015) Live <i>Faecalibacterium prausnitzii</i> in an apical anaerobic model of the intestinal epithelial barrier. <i>Cell Microbiol.</i> 17, 226.
M. Kolter, M. Ott, C. Hauer, I. Reimold, G. Fricker (2015) Nanotoxicity of poly(n-butylcyano-acrylate) nanoparticles at the blood-brain barrier, in human whole blood and in vivo. <i>J. Control Release</i> 197, 165.
M. Lautenschläger, J. Sendker, S. Hüwel, H.J. Galla, S. Brandt, M. Düfer, K. Riehemann, A. Hensel (2015) Intestinal formation of trans-crocetin from saffron extract (<i>Crocus sativus</i> L.) and in vitro permeation through intestinal and blood brain barrier. <i>Phytomed.</i> 22, 36.
S. Cramer, S. Tacke, J. Bornhorst, J. Klingauf, T. Schwerdtle, H.-J. Galla (2014) The influence of silver nanoparticles on the blood-brain and the blood-cerebrospinal fluid barrier in vitro. <i>J. Nanomed. Nanotechnol.</i> 5, 225.

<p>K. Ridder, S. Keller, M. Dams, A.-K. Rupp, J. Schlaudraff, D. Del Turco, J. Starmann, J. Macas, D. Karpova, K. Devraj, C. Depboylu, B. Landfried, B. Arnold, K.H. Plate, G. Höglinger, H. Sülmann, P. Altevogt, S. Momma (2014) Extracellular vesicle-mediated transfer of genetic information between the hematopoietic system and the brain in response to inflammation. <i>PLoS Biol.</i> 12, e1001874.</p>
<p>M. Dadparvar, S. Wagner, S. Wien, F. Worek, H. von Briesen, J. Kreuter (2014) Freeze-drying of HI-6-loaded recombinant human serum albumin nanoparticles for improved storage stability. <i>Euro. J. Pharm. Biopharm.</i> 88, 510.</p>
<p>N. Hudson, M.B. Powner, M.H. Sarker, T. Burgoyne, M. Campbell, Z.K. Ockrim, R. Martinelli, C.E. Futter, M.B. Grant, P.A. Fraser, D.T. Shima, J. Greenwood, P. Turowski (2014) Differential apicobasal VEGF signaling at vascular blood-neural barriers. <i>Dev. Cell.</i> 30, 541.</p>
<p>E.G. Christensen, T.R. Licht, T.D. Leser, M.I. Bahl (2014) Dietary xylo-oligosaccharide stimulates intestinal bifidobacteria and lactobacilli but has limited effect on intestinal integrity in rats. <i>BMC Res. Notes</i> 7, 660.</p>
<p>E.A. Jähne, D.E. Eigenmann, M. Culot, R. Cecchelli, F.R. Walter, M.A. Deli, R. Tremmel, G. Fricker, M. Smiesko, M. Hamburger, M. Oufir (2014) Development and validation of a LC-MS/MS method for assessment of an anti-inflammatory indolinone derivative by in vitro blood-brain barrier models. <i>J. Pharm. Biomed. Anal.</i> 98, 235.</p>
<p>C. Bourgeois, E. Werfel, F. Galla, K. Lehmkuhl, H. Torres-Gómez, D. Schepmann, B. Kögel, T. Christoph, W. Straßburger, W. Englberger, M. Soeberdt, S. Hüwel, H.-J. Galla, B. Wünsch (2014) Synthesis and pharmacological evaluation of 5-pyrrolidinylquinoxalines as a novel class of peripherally restricted κ-opioid receptor agonists. <i>J. Med. Chem.</i> 57, 6845.</p>
<p>M. Jin, J.-H. Kim, E. Jang, Y.M. Lee, H.S. Han, D.K. Woo, D.H. Park, H. Kook, K. Suk (2014) Lipocalin-2 deficiency attenuates neuroinflammation and brain injury after transient middle cerebral artery occlusion in mice. <i>J. Cereb. Blood Flow Metab.</i> 34, 1306.</p>
<p>F. Hattori, C. Kiatsurayanon, K. Okumura, H. Ogawa, S. Ikeda, K. Okamoto, F. Niyonsaba (2014) The antimicrobial protein S100A7/psoriasis enhances the expression of keratinocyte differentiation markers and strengthens the skin's tight junction barrier. <i>Br. J. Dermatol.</i> 171, 742.</p>

<p>T: Akiyama, F: Niyonsaba, Ch. Kiatsurayanon, T.T. Nguyen, H. Ushio, T. Fujimura, T. Ueno, K. Okumura, H. Ogawa, S. Ikeda (2014) The human cathelicidin LL-37 host defense peptide upregulates tight junction-related proteins and increases human epidermal keratinocyte barrier function. <i>J. Innate Immun.</i> 6, 739.</p>
<p>A. Ochel, M. Rohde, G.S. Chhatwal, S.R. Talay (2014) The M1 Protein of <i>Streptococcus pyogenes</i> Triggers an innate uptake mechanism into polarized human endothelial cells. <i>J. Innate Immun.</i> 6, 585.</p>
<p>I. Wilhelm, C. Fazakas, A. Tamás, G. Tóth, D. Regl, I.A. Krizbai (2014) PACAP enhances barrier properties of cerebral microvessels. <i>J. Mol. Neurosci.</i> 54, 469.</p>
<p>S.A. Tria, M. Ramuz, M. Huerta, P. Leleux, J. Rivnay, L.H. Jimison, A. Hama, G.G. Mall (2014) Dynamic monitoring of salmonella typhimurium infection of polarized epithelia using organic transistors. <i>Adv. Healthcare Mater.</i> 3, 1053.</p>
<p>C. Kiatsurayanon, F. Niyonsaba, R. Smithrithee, T. Akiyama, H. Ushio, M. Hara, K. Okumura, S. Ikeda, H. Ogawa (2014) Host defense (antimicrobial) peptide, human β-defensin-3, improves the function of the epithelial tight-junction barrier in human keratinocytes. <i>Invest. Dermatol.</i> 134, 2163.</p>
<p>S.W. Park, J.H. Kim, I Mook-Jung, K.-W. Kim, W.J. Park, K.H. Park, J.H. Kim (2014) Intracellular amyloid beta alters the tight junction of retinal pigment epithelium in 5XFAD mice. <i>Neurobiol Aging.</i> 35, 2013.</p>
<p>J. Li, M. Zhuo, L. Pei, M. Rajagopa, A.S.L. Yu (2014) Comprehensive cysteine-scanning mutagenesis reveals claudin-2 pore-lining residues with different intrapore locations. <i>J. Biol. Chem.</i> 289, 6475.</p>
<p>M.K. Nøhra, S.H. Hansena, B. Brodin, R. Holm, C.U. Nielsen (2014) The absorptive flux of the anti-epileptic drug substance vigabatrin is carrier-mediated across Caco-2 cell monolayers. <i>Euro. J. Pharm. Sci.</i> 51, 1.</p>
<p>K. Nomura, K. Obata, T. Keira, R. Miyata, S. Hirakawa, K. Takano, T. Kohno, N. Sawada, T. Himi, T. Kojima (2014) <i>Pseudomonas aeruginosa</i> elastase causes transient disruption of tight junctions and downregulation of PAR-2 in human nasal epithelial cells. <i>Respir. Res.</i> 15, 21.</p>
<p>C.J. Czupalla, S. Liebner, K. Devraj (2014) In vitro models of the blood-brain barrier. <i>Cerebral Angiogenesis Method Molec. Biol.</i> 1135, 415.</p>

<p>P. Paganetti, K. Antonello, K. Devraj, N. Toni, D. Kieran, R. Madani, M. Pihlgren, O. Adolfsson, W. Froestl, A. Schratzenholz, S. Liebner, D. Havas, M. Windisch, J.R. Cirrito, A. Pfeifer, A. Muhs (2014) Increased efflux of amyloid-β peptides through the blood-brain barrier by muscarinic acetylcholine receptor inhibition reduces pathological phenotypes in mouse models of brain amyloidosis. <i>J. Alzheimer's Disease</i> 38, 767.</p>
<p>K.J. Frank, U. Westedt, K.M. Rosenblatt, P. Hölig, J. Rosenberg, M. Mägerlein, G. Fricker, M. Brandl (2014) What is the mechanism behind increased permeation rate of a poorly soluble drug from aqueous dispersions of an amorphous solid dispersion? <i>J. Pharm. Sci.</i> 103, 1779.</p>
<p>O. Rossi , J. Karczewski, E.H. Stolte, R.J.M. Brummer, M.A. van Nieuwenhoven, M. Meijerink, J.R.J. van Neerven, S.C.D. van Ijzendoorn, P. van Baarlen, J.M. Wells (2013) Vectorial secretion of interleukin-8 mediates autocrine signalling in intestinal epithelial cells via apically located CXCR1. <i>BMC Res. Notes</i> 6, 431.</p>
<p>R. Paolinelli, M. Corada, L. Ferrarini, K. Devraj, C. Artus, C.J. Czupalla, N. Rudini, L. Maddaluno, E. Papa, B. Engelhardt, P.O. Couraud, S. Liebner, E. Dejana (2013) Wnt activation of immortalized brain endothelial cells as a tool for generating a standardized model of the blood brain barrier in vitro. <i>PLoS One</i> 8, e70233.</p>
<p>S. Bittner, T. Ruck, M.K. Schuhmann, A.M. Herrmann, H. Moha ou Maati, N. Bobak, K. Göbel, F. Langhauser, D. Stegner, P. Ehling, M. Borsotto, H.-C. Pape, B. Nieswandt, C. Kleinschnitz, C. Heurteaux, H.-J. Galla, T. Budde, H. Wiendl, S.G. Meuth (2013) Endothelial TWIK-related potassium channel-1 (TREK1) regulates immune-cell trafficking into the CNS. <i>Nat. Med.</i> 19, 1161.</p>
<p>L. Leffers, C.A. Wehe, S. Hüwel, M. Bartel, F. Ebert, M.S. Taleshi, H.-J. Galla, U. Karst, K.A. Francesconie, T. Schwerdtle (2013) In vitro intestinal bioavailability of arsenosugar metabolites and presystemic metabolism of thio-dimethylarsinic acid in Caco-2 cells. <i>Metallomics</i> 5, 1031.</p>
<p>D.E. Eigenmann, G. Xue, K.S. Kim KS, A.V. Moses, M. Hamburger, M. Oufir (2013) Comparative study of four immortalized human brain capillary endothelial cell lines, hCMEC/D3, hBMEC, TY10, and BB19, and optimization of culture conditions, for an in vitro blood-brain barrier model for drug permeability studies. <i>Fluids Barriers CNS</i> 10, 33.</p>

<p>S. Hemmersbach, S.S. Brauer, S. Hüwel, H.J. Galla, H.U. Humpf (2013) Transepithelial permeability studies of flavan-3-ol-C-glucosides and procyanidin dimers and trimers across the Caco-2 cell monolayer. <i>J. Agric. Food Chem.</i> 61, 7932.</p>
<p>H. Puerta-Guardo, A. Raya Sandino, L. González-Mariscal, V.H. Rosales, J. Ayala-Dávila, B. Chávez-Mungía, D. Martínez-Fong, F. Medina, J.E. Ludert, R. María del Angel (2013) The cytokine response of U937-derived macrophages infected through antibody dependent enhancement of dengue virus disrupts cell apical junctional complexes and increase vascular permeability. <i>J. Virol.</i> 87, 7486.</p>
<p>C. Schäfer, K.R. Schröder, O. Höglinger, S. Tollabimazraehno, M.R. Lornejad-Schäfer (2013) Acetaminophen Changes Intestinal Epithelial Cell Membrane Properties, Subsequently Affecting Absorption Processes. <i>Cell Physiol. Biochem.</i> 32, 431.</p>
<p>S. Tria, L.H. Jimison, A. Hama, M. Bongo, R.M. Owens (2013) Validation of the organic electrochemical transistor for in vitro toxicology. <i>Biochim. Biophys. Acta</i> 1830, 4381.</p>
<p>L. Leffers, F. Ebert, M.S. Taleshi, K.A. Francesconi, T. Schwerdtle (2013) In vitro toxicological characterization of two arsenosugars and their metabolites. <i>Mol. Nutr. Food Res.</i> 57, 1270.</p>
<p>I. Meisen, R. Rosenbrück, H.J. Galla, S. Hüwel, I.U. Kouzel, M. Mormann, H. Karch, J. Müthing (2013) Expression of Shiga toxin 2e glycosphingolipid receptors of primary porcine brain endothelial cells and toxin-mediated breakdown of the blood-brain barrier. <i>Glycobiol.</i> 23, 745.</p>
<p>K. Benson, S. Cramer, H.J. Galla (2013) Impedance-based cell monitoring: barrier properties and beyond. <i>Fluids Barriers CNS</i> 10, 5.</p>
<p>M. Weidner, S. Hüwel, F. Ebert, T. Schwerdtle, H.J. Galla, H.U. Humpf (2013) Influence of T-2 and HT-2 Toxin on the Blood-Brain Barrier In Vitro: New Experimental Hints for Neurotoxic Effects. <i>PLoS ONE</i> 8, e60484.</p>
<p>J. Lemmen, I.E.P. Tozakidis, P. Bele, H.J. Galla (2013) Constitutive androstane receptor upregulates Abcb1 and Abcg2 at the blood-brain barrier after CITCO activation. <i>Brain Res.</i> 1501, 68.</p>
<p>S. Tria, L.H. Jimison, A. Hama, M. Bongo, R.M. Owens (2013) Sensing of EGTA Mediated Barrier Tissue Disruption with an Organic Transistor. <i>Biosens.</i> 3, 44.</p>

J. Lemmen, I.E.P. Tozakidis, H.J. Galla (2013) Pregnane X receptor upregulates ABC-transporter Abcg2 and Abcb1 at the blood-brain barrier. <i>Brain Res.</i> 1491, 1.
K.J. Franka, K.M. Rosenblatt, U. Westedt, P. Hölig, J. Rosenberg, M. Mägerlein, G. Fricker, M. Brandl (2012) Amorphous solid dispersion enhances permeation of poorly soluble ABT-102: True supersaturation vs. apparent solubility enhancement. <i>Int. J. Pharm.</i> 437, 288.
J. Bornhorst, C.A. Wehe, S. Hüwel, U. Karst, H.J. Galla, T. Schwerdtle (2012) Impact of manganese on and transfer across the blood-brain and blood-CSF barrier in vitro. <i>J. Biol. Chem.</i> 287, 17140.
K. J. Frank, U. Westedt, K. M. Rosenblatt, P. Hölig, J. Rosenberg, M. Mägerlein, M. Brandl, G. Fricker (2012) Impact of FaSSIF on the solubility and dissolution-/permeation rate of a poorly water-soluble compound. <i>Euro. J. Pharm. Sci.</i> 47, 16.
Y. Lee, K. E. Geckeler (2012) Cellular Interactions of a Water-Soluble Supramolecular Polymer Complex of Carbon Nanotubes with Human Epithelial Colorectal Adenocarcinoma Cells. <i>Macro. Biosci.</i> 12, 1060.
R. Qiao, Q. Jia, S. Hüwel, R. Xia, T. Liu, F. Gao, H.J. Galla, M. Gao (2012) Receptor-Mediated Delivery of Magnetic Nanoparticles across the Blood-Brain Barrier. <i>ACS Nano</i> 6, 3304.
S. Simon, R. Schubert (2012) Inhibitory effect of phospholipids on P-glycoprotein: Cellular studies in Caco-2, MDCKII mdr1 and MDCKII wildtype cells and P-gp ATPase activity measurements. <i>Biochim. Biophys. Acta</i> 1821, 1211.
M. Lüttge, M. Fulde, S.R. Talay, A. Nerlich, M. Rohde, K.T. Preissner, S. Hammerschmidt, M. Steinert, T.J. Mitchell, G.S. Chhatwal, S. Bergmann (2012) Streptococcus pneumoniae induces exocytosis of Weibel-Palade bodies in pulmonary endothelial cells. <i>Cell. Microbiol.</i> 14, 210.
S. Iden, S. Misselwitz, S.S.D. Peddibhotla, H. Tuncay, D. Rehder, V. Gerke, H. Robenek, A. Suzuki, K. Ebnet (2012) aPKC phosphorylates JAM-A at Ser285 to promote cell contact maturation and tight junction formation. <i>J. Cell. Biol.</i> 196, 623.
D. Mulac, S. Hüwel, H.J. Galla, H.U. Humpf (2012) Permeability of ergot alkaloids across the blood-brain barrier in vitro and influence on the barrier integrity. <i>Mol. Nutr. Food Res.</i> 56, 475.

<p>A. Veshnyakova, J. Piontek, J. Protze, N. Waziri, I. Heise, G. Krause (2012) Mechanism of clostridium perfringens enterotoxin interaction with claudin-3/-4 protein suggests structural modifications of the toxin to target specific claudins. <i>J. Biol. Chem.</i> 287, 1698.</p>
<p>K. Veltman, S. Hummel, C. Cichon, U. Sonnenborn, M.A. Schmidt (2012) Identification of specific miRNAs targeting proteins of the apical junctional complex that simulate the probiotic effect of <i>E. coli</i> Nissle 1917 on T84 epithelial cells. <i>Int. J. Biochem. Cell Biol.</i> 44, 341.</p>
<p>V. Hornok, T. Bujdosó, J. Toldi, K. Nagy, I. Demeter, C. Fazakas, I. Krizbai, L. Vécsei, I. Dékány (2012) Preparation and properties of nanoscale containers for biomedical application in drug delivery: preliminary studies with kynurenic acid. <i>J. Neural. Transm.</i> 119, 115.</p>
<p>S. Hummel, K. Veltman, C. Cichon, U. Sonnenborn, M.A. Schmidt (2012) Differential targeting of the E-cadherin/β-catenin complex by gram-positive probiotic lactobacilli improves epithelial barrier function. <i>Appl. Environ. Microbiol.</i> 78, 1140.</p>
<p>Fischer, S. M., Brandl, M. & Fricker, G. (2011) Effect of the non-ionic surfactant poloxamer 188 on passive permeability of poorly soluble drugs across caco-2 cell monolayers. <i>Eur J Pharm Biopharm. Eui J Pharm Biopharm.</i> doi:10.1016/j.ejpb.2011.04.010</p>
<p>Dadparvara, M., Wagner, S., Wien, S., Kufleitner, J., Worek, F., Von Briesen, H. & Kreuter, J. (2011) Hi 6 human serum albumin nanoparticles-development and transport over an in vitro blood-brain barrier model. <i>Toxicol Lett</i>, 206(1), 60-66.</p>
<p>Schnoor, M., Lai, F. P., Zarbock, A., Klaver, R., Polaschegg, C., Schulte, D., Weich, H. A., Oelkers, J. M., Rottner, K. & Vestweber, D. (2011) Cortactin deficiency is associated with reduced neutrophil recruitment but increased vascular permeability in vivo. <i>J Exp Med</i>, 208(8), 1721-1735.</p>
<p>Fazakas, C., Wilhelm, I., Nagyoszi, P., Farkas, A. E., Hasko, J., Molnar, J., Bauer, H., Bauer, H. C., Ayaydin, F., Dung, N. T., Siklos, L. & Krizbai, I. A. (2011) Transmigration of melanoma cells through the blood-brain barrier: Role of endothelial tight junctions and melanoma-released serine proteases. <i>PLoS One</i>, 6(6), e20758.</p>
<p>Thanabalasundaram, G., Schneidewind, J., Pieper, C. & Galla, H. J. (2011) The impact of pericytes on the blood-brain barrier integrity depends critically on the pericyte differentiation stage. <i>Int J Biochem Cell Biol</i>, 43(9), 1284-1293.</p>

<p>Matthes, F., Wolte, P., Bockenhoff, A., Huwel, S., Schulz, M., Hyden, P., Fogh, J., Gieselmann, V., Galla, H. J. & Matzner, U. (2011) Transport of arylsulfatase a across the blood-brain barrier in vitro. <i>J Biol Chem</i>, 286(20), 17487-17494.</p>
<p>Wilhelm, I., Fazakas, C. & Krizbai, I. A. (2011) In vitro models of the blood-brain barrier. <i>Acta Neurobiol Exp (Wars)</i>, 71(1), 113-128.</p>
<p>Rempe, R., Cramer, S., Huwel, S. & Galla, H. J. (2011) Transport of poly(n-butylcyano-acrylate) nanoparticles across the blood-brain barrier in vitro and their influence on barrier integrity. <i>Biochem Biophys Res Commun</i>, 406(1), 64-69.</p>
<p>Cooper, I., Cohen-Kashi Malina, K., Cagnotto, A., Bazzoni, G., Salmona, M. & Teichberg, V. I. (2011) Interactions of the prion peptide (prp 106-126) with brain capillary endothelial cells: Coordinated cell killing and remodeling of intercellular junctions. <i>J Neurochem</i>, 116(4), 467-475.</p>
<p>Wedel-Parlow, M., Schrot, S., Lemmen, J., Treeratanapiboon, L., Wegener, J. & Galla, H. J. (2011) Neutrophils cross the bbb primarily on transcellular pathways: An in vitro study. <i>Brain Res</i>, 1367, 62-76.</p>
<p>Wang, X., Hisha, H., Mizokami, T., Cui, W., Cui, Y., Shi, A., Song, C., Okazaki, S., Li, Q., Feng, W., Kato, J. & Ikehara, S. (2010) Mouse mesenchymal stem cells can support human hematopoiesis both in vitro and in vivo: The crucial role of neural cell adhesion molecule. <i>Haematologica</i>, 95(6), 884-891.</p>
<p>Ulmann, L., Hirbec, H. & Rassendren, F. (2010) P2x4 receptors mediate pge2 release by tissue-resident macrophages and initiate inflammatory pain. <i>Embo J</i>, 29(14), 2290-2300.</p>
<p>Ohsawa, K., Irino, Y., Sanagi, T., Nakamura, Y., Suzuki, E., Inoue, K. & Kohsaka, S. (2010) P2y12 receptor-mediated integrin-beta1 activation regulates microglial process extension induced by atp. <i>Glia</i>, 58(7), 790-801.</p>
<p>Naito, M., Harumi, T. & Kuwana, T. (2010) Long term in vitro culture of chicken primordial germ cells isolated from embryonic blood and incorporation into germline of recipient embryo. <i>J Poult Sci</i>, 47(1), 57-64.</p>
<p>Matsuyama, Y., Okazaki, H., Tamemoto, H., Kimura, H., Kamata, Y., Nagatani, K., Nagashima, T., Hayakawa, M., Iwamoto, M., Yoshio, T., Tominaga, S. & Minota, S. (2010) Increased levels of interleukin 33 in sera and synovial fluid from patients with active rheumatoid arthritis. <i>J Rheumatol</i>, 37(1), 18-25.</p>

Ii, M. (2010) Bone marrow-derived endothelial progenitor cells: Isolation and characterization for myocardial repair. <i>Methods Mol Biol</i> , 660, 9-27.
Carr, G., Wright, J. A. & Simmons, N. L. (2010) Epithelial barrier resistance is increased by the divalent cation zinc in cultured mdckii epithelial monolayers. <i>J Membr Biol</i> , 237(2-3), 115-123.
Lischper, M., Beuck, S., Thanabalasundaram, G., Pieper, C. & Galla, H. J. (2010) Metalloproteinase mediated occludin cleavage in the cerebral microcapillary endothelium under pathological conditions. <i>Brain Res</i> , 1326,114-127.
Wagner, S., Kufleitner, J., Zensi, A., Dadparvar, M., Wien, S., Bungert, J., Vogel, T., Worek, F., Kreuter, J. & Von Briesen, H. (2010) Nanoparticulate transport of oximes over an in vitro blood-brain barrier model. <i>PLoS One</i> , 5(12), e14213.
Sousa, F., Mandal, S., Garrovo, C., Astolfo, A., Bonifacio, A., Latawiec, D., Menk, R. H., Arfelli, F., Huewel, S., Legname, G., Galla, H. J. & Krol, S. (2010) Functionalized gold nanoparticles: A detailed in vivo multimodal microscopic brain distribution study. <i>Nanoscale</i> , 2(12), 2826-2834.
Parmentier, J., Hartmann, F. J. & Fricker, G. (2010) In vitro evaluation of liposomes containing bio-enhancers for the oral delivery of macromolecules. <i>Eur J Pharm Biopharm</i> , 76(3), 394-403.
Klas, J., Wolburg, H., Terasaki, T., Fricker, G. & Reichel, V. (2010) Characterization of immortalized choroid plexus epithelial cell lines for studies of transport processes across the blood-cerebrospinal fluid barrier. <i>Cerebrospinal Fluid Res</i> , 7(11).
Thanabalasundaram, G., Pieper, C., Lischper, M. & Galla, H. J. (2010) Regulation of the blood-brain barrier integrity by pericytes via matrix metalloproteinases mediated activation of vascular endothelial growth factor in vitro. <i>Brain Res</i> , 1347, 1-10.
Karczewski, J., Troost, F. J., Konings, I., Dekker, J., Kleerebezem, M., Brummer, R. J. & Wells, J. M. (2010) Regulation of human epithelial tight junction proteins by lactobacillus plantarum in vivo and protective effects on the epithelial barrier. <i>Am J Physiol Gastrointest Liver Physiol</i> , 298(6), G851-859.

Ishii K., Fumoto T., Iwai K., Takeshita S., Ito M., Shimohata N., Aburatani H., Taketani S., Lelliott C.J., Vidal-Puig A. and Ikeda K.(2009)Coordination of PGC-1 β and iron uptake in mitochondrial biogenesis and osteoclast activation. Nature Med 15, 259-266.