

に向けて", 第2回 血液細胞療法フォーラム,  
2005.07.17.

12. 田口明彦: "脳血管障害に対する普遍的な再生医療の確立", Brain & Heart Attack Forum,  
2005.04.16.

(7) 福山直人

① 論文発表

【原 著】

1. Fukuyama N, Jujo S, Ito I, Shizuma T, Myojin K, Ishiwata K, Nagano M, Nakazawa H, Mori H: Kurozu moromimatsu inhibits tumor growth of Lovo cells in a mouse model in vivo. Nutrition, 23(1): 81-86, 2007.
2. Fukuyama N, Tanaka E, Tabata Y, Fujikura H, Hagihara M, Sakamoto H, Ando K, Nakazawa H, Mori H: Intravenous injection of phagocytes transfected ex vivo with FGF4 DNA/biodegradable gelatin complex promotes angiogenesis in a rat myocardial ischemia/reperfusion injury model. Basic Res Cardiol, 2006 online.
3. Kimura K, Shinozaki Y, Jujo S, Shizuma T, Fukuyama N, Nakazawa H: Triiodothyronine acutely increases blood flow in the ventricles and kidneys of anesthetized rabbits. Thyroid, 16(4): 357-360, 2006.
4. Kimura K, Goto T, Yagi K, Furuya H, Jujo S, Itoh J, Sawamura S, Koide S, Mori H, Fukuyama N: Biphasic of inducible nitric oxide synthase in a hind limb ischemia model. J.Clin.Biochem.Nutr., 38(2): 1-8, 2006.
5. Goto T, Fukuyama N, Aki A, Kanabuchi K, Kimura K, Taira H, Tanaka E, Wakana N, Mori H, Inoue H: Search for appropriate experimental methods to create stable hind-limb ischemia in mouse. Tokai J Exp Clin Med, 31(3): 128-132, 2006.
6. Fukuyama N, Onuma T, Jujo S, Tamai Y, Suzuki T, Sugio Y, Tabata Y, Ishihara Y, Takano J, Mori H:

Efficient preparation of cationized gelatin for gene transduction. Tokai J Exp Clin Med, 31(2): 49-52, 2006.

7. Khurelbaatar N, Fukuyama N, Nakazawa H: Results of screening with liver cancer patients for the hepatitis B and C viral markers. J Health Science UB, 1: 111-114, 2005.
8. Chen Y, Hozawa S, Sawamura S, Sato S, Fukuyama N, Tsuji C, Mine T, Okada Y, Tanino R, Ogushi Y, Nakazawa H: Deficiency of inducible nitric oxide synthase exacerbates hepatic fibrosis in mice fed high-fat diet. Biochem Biophys Res Commun, 326(1): 45-51, 2005.
9. Miyamoto K, Nakanishi H, Moriguchi S, Fukuyama N, Eto K, Wakamiya J, Murao K, Arimura K, Osame M: Involvement of enhanced sensitivity of NMDA receptors in vulnerability of developing cortical neurons to methylmercury neurotoxicity. TOXICOLOGY AND APPLIED PHARMACOLOGY, 321-321, 2004.
10. Hayashi Y, Sawa Y, Nishimura M, Fukuyama N, Ichikawa H, Ohtake S, Nakazawa H, Matsuda H: Peroxynitrite, a product between nitric oxide and superoxide anion, plays a cytotoxic role in the development of post-bypass systemic inflammatory response. Eur J Cardiothorac Surg, 26(2): 276-280, 2004.

② 学会発表

1. 静間徹, 重城志緒, 石渡一夫, 中澤博江, 盛英三, 長野正信, 福山直人: DSS 誘発性大腸炎マウスにおける黒酢の効果. 第22回日本静脈経腸栄養学会愛媛,

H. 知的財産権の出願・登録

【盛 英三】

- ① 国際特許出願 PCT/JP00/07882 : 核酸含有複合体

- ② 特願平 11-187091 : X線診断システム
- ③ 特願 2005-19802 : Mono-layered mesenchymal stem cells

【田口明彦】

- ① 国際出願番号 PCT/JP2006/302350 : 松山知弘、田口明彦、芳川浩男、神経幹細胞の調整法

別紙 4

研究成果の刊行に関する一覧表

書籍

	著者名	タイトル	書籍全体編集者名	書籍名	出版社名	出版地	出版年	ページ
1	Mori H, Matsuda H	Cardiovascular Regeneration Therapies Using Tissue Engineering Approaches	Mori H, Matsuda H	Cardiovascular Regeneration Therapies Using Tissue Engineering Approaches	Springer	東京	2005	248
2	Nishigami K, Nakatani T, Chiku M, Mori H	A Novel Micro-Angiography Detecting Angiogenesis, Application for Autologous Bone Marrow Mononuclear Cells Transplantation in the Patients with Critical Limb Ischemia	Mori H, Matsuda H	Cardiovascular Regeneration Therapies Using Tissue Engineering Approaches	Springer	東京	2005	191-200
3	竹下聡	VEGF/VEGF-E (末梢動脈疾患)	松本邦夫, 田畑泰彦	細胞増殖因子と再生医療	メディカルレビュー社	大阪	2006	304-308
4	田口明彦	その他の新しい治療法：炭酸浴療法による血流改善	田口明彦	Burger 病専門誌(改訂版), パーリジャー病治療と看護総覧	茨城県パーリジャー病患者と家族の会	東京	2005	29-31
5	田口明彦	自己幹細胞移植による血管再生療法	田口明彦	Burger 病専門誌(改訂版), パーリジャー病治療と看護総覧	茨城県パーリジャー病患者と家族の会	東京	2005	24-28
6	知久正明, 西上和宏, 内藤博昭, 盛英三, 佐藤英一	細胞, 組織, 臓器の評価法 画像解析 微小血管造影 (解説・特集)	田畑泰彦	遺伝子医学 MOOK, 再生医療へのプレイクスルー その革新技術と今後の方向性	メディカルドゥ	大阪	2004	223-227
7	國本聡, 笠原啓史, 福山直人, 田中越郎, . . . . ., 盛英三	遺伝子による血管新生	田畑泰彦	再生医療の実際	羊土社		2003	116-123
8	知久正明, 西上和宏, 佐藤英一, 盛英三	放射光および普及型 X 線源を用いた微小血管造影による再生血管の評価	西村恒彦	機能・代謝画像診断法と分子画像	南山堂		2003	177-186

雑誌

	発表者氏名	論文タイトル	発表雑誌名	巻名	ページ	出版年
1	Fukuyama N, Tanaka E, Tabata Y, Fujikura H, Hagihara M, Sakamoto H, Ando K, Nakazawa H, Mori H	Intravenous injection of phagocytes transfected ex vivo with FGF4 DNA/biodegradable gelatin complex promotes angiogenesis in a rat myocardial ischemia/reperfusion injury model	Basic Res Cardiol		8	2006 online
2	Goto Y, Saito M, Iwasaka T, Daida H, Kohzuki M, Ueshima K, Makita S, Adachi H, Yokoi H, Omiya K, Mikouchi H, Yokoyama H	Poor implementation of cardiac rehabilitation despite broad dissemination of coronary interventions for acute myocardial infarction in Japan	Circ J.	71 (2)	173-179	2007
3	Yasuda S, Miyazaki S, Kinoshita H, Nagaya N, Kanda M, Goto Y, Nonogi H	Enhanced cardiac production of matrix metalloproteinase-2 and -9 and its attenuation associated with pravastatin treatment in patients with acute myocardial infarction	Clin Sci (Lond)	112 (1)	43-49	2007
4	Igarashi T, Oishi Y, Araki S, Mori H, Takeda S	Crystallization and preliminary X-ray crystallographic analysis of two vascular apoptosis-inducing proteins (VAPs) from <i>Crotalus atrox</i> venom	Acta Crystallograph Sect F Struct Biol Cryst Commun	62 (Pt 7)	688-691	2006
5	Iwanaga Y, Nishi I, Furuichi S, Noguchi T, Sase K, Kihara Y, Goto Y, Nonogi H	B-type natriuretic peptide strongly reflects diastolic wall stress in patients with chronic heart failure: comparison between systolic and diastolic heart failure	J Am Coll Cardiol	47 (4)	742-748	2006
6	Sato E, Hayasi Y, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Ido H	K-edge angiography utilizing a tungsten plasma x-ray generator in conjunction with gadolinium-based contrast media	Rad.Phys.C hem.	75	1841-1849	2006
7	Amino M, Yoshioka K, Tanabe T, Tanaka E, Mori H, Furusawa Y, Zareba W, Yamazaki M, Nakagawa H, Honjo H, Yasui K, Kamiya K, Kodama I	Heavy ion radiation up-regulates Cx43 and ameliorates arrhythmogenic substrates in hearts after myocardial infarction	Cardiovasc Res	72 (3)	412-421	2006
8	Ben Ammar Y, Takeda S, Hisamitsu T, Mori H, Wakabayashi S	Crystal structure of CHP2 complexed with NHE1-cytosolic region and an implication for pH regulation	Embo J	25 (11)	2315-2325	2006
9	Enomoto T, Sato E, Sumiyama Y, Aizawa K, Watanabe M, Tanaka E, Mori H, Kawakami H, Kawai T, Inoue T, Ogawa A, Sato S	Enhanced magnification angiography using 20-um-focus tungsten tube	Jpn. J. Appl. Phys.	45	8005-8009	2006

10	Fukuyama N, Onuma T, Jujo S, Tamai Y, Suzuki T, Sugio Y, Tabata Y, Ishihara Y, Takano J, Mori H	Efficient preparation of cationized gelatin for gene transduction	Tokai J Exp Clin Med	31 (2)	49-52	2006
11	Goto T, Fukuyama N, Aki A, Kanabuchi K, Kimura K, Taira H, Tanaka E, Wakana N, Mori H, Inoue H	Search for appropriate experimental methods to create stable hind-limb ischemia in mouse	Tokai J Exp Clin Med	31(3)	128-132	2006
12	Hirata A, Minamino T, Asanuma H, Fujita M, Wakeno M, Myoishi M, Tsukamoto O, Okada K, Koyama H, Komamura K, Takashima S, Shinozaki Y, Mori H, Shiraga M, Kitakaze M, Hori M	Erythropoietin enhances neovascularization of ischemic myocardium and improves left ventricular dysfunction after myocardial infarction in dogs	J Am Coll Cardiol	48 (1)	176-184	2006
13	Iwai N, Kajimoto K, Kokubo Y, Okayama A, Miyazaki S, Nonogi H, Goto Y, Tomoike H	Assessment of genetic effects of polymorphisms in the MCP-1 gene on serum MCP-1 levels and myocardial infarction in Japanese	Circ J	70 (7)	805-809	2006
14	Kawada T, Yamazaki T, Akiyama T, Li M, Ariumi H, Mori H, Sunagawa K, Sugimachi M	Vagal stimulation suppresses ischemia-induced myocardial interstitial norepinephrine release	Life Sci	78 (8)	882-887	2006
15	Kawada T, Yamazaki T, Akiyama T, Uemura K, Kamiya A, Shishido T, Mori H, Sugimachi M	Effects of Ca <sup>2+</sup> channel antagonists on nerve stimulation-induced and ischemia-induced myocardial interstitial acetylcholine release in cats	Am J Physiol Heart Circ Physiol	291 (5)	H2187-2191	2006
16	Kikuchi-Taura A, Soma T, Matsuyama T, Stern D, Taguchi A	Quantifying CD34+ Cells in Peripheral Blood of the Patients With Cardiovascular Disease	Texas Heart Institute Journal	33	427-429	2006
17	Kimura K, Goto T, Yagi K, Furuya H, Jujo S, Itoh J, Sawamura S, Koide S, Mori H, Fukuyama N	Biphasic Action of Inducible Nitric Oxide Synthase in a Hindlimb Ischemia Model	J.Clin.Biochem.Nutr.	38 (2)	95-102	2006
18	Kimura K, Shinozaki Y, Jujo S, Shizuma T, Fukuyama N, Nakazawa H	Triiodothyronine acutely increases blood flow in the ventricles and kidneys of anesthetized rabbits	Thyroid	16 (4)	357-360	2006
19	Kuroko Y, Tokunaga N, Yamazaki T, Akiyama T, Ishino K, Sano S, Mori H	Effect of sustained limb ischemia on norepinephrine release from skeletal muscle sympathetic nerve endings	Neurochem Int	49	448-453	2006
20	Masuda M, Takeda S, Sone M, Ohki T, Mori H, Kamioka Y, Mochizuki N	Endophilin BAR domain drives membrane curvature by two newly identified structure-based mechanisms	Embo J		1-9	2006

21	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, Mori H	Monolayered mesenchymal stem cells repair scarred myocardium after myocardial infarction	Nat Med	12 (4)	459-465	2006
22	Miyahara Y, Ohnishi S, Obata H, Ishino K, Sano S, Mori H, Kangawa K, Kitamura S, Nagaya N	Beraprost sodium enhances neovascularization in ischemic myocardium by mobilizing bone marrow cells in rats	Biochem Biophys Res Commun	349 (4)	1242-1249	2006
23	Miyamoto K, Nishigami K, Nagaya N, Akutsu K, Chiku M, Kamei M, Soma T, Miyata S, Higashi M, Tanaka R, Nakatani T, Nonogi H, Takeshita S	Unblinded pilot study of autologous transplantation of bone marrow mononuclear cells in patients with thromboangiitis obliterans	Circulation	114 (24)	2679-2684	2006
24	Sato E, Hayashi Y, Germer R, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Onagawa J	X-ray Spectra from Weakly Ionized Linear Copper Plasma	Japanese Journal of Applied Physics	45 (6A)	5301-5306	2006
25	Sato E, Hayashi Y, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Onagawa J, Ido H	Preliminary study for producing higher harmonic hard x-rays from weakly ionized nickel plasma	Rad.Phys.Chem.	75	1812-1818	2006
26	Sato E, Sugiyama H, Ando M, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Takayama K, Onagawa J, Ido H	Tunable narrow-photon-energy x-ray generator utilizing a tungsten-target tube	Rad. Phys. Chem.	75	2008-2013	2006
27	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Izumisawa M, Takahashi K, Sato S, Ichimaru T, Takayama K	Enhanced real-time magnification angiography utilizing a 100- $\mu$ m-focus x-ray generator in conjunction with an image intensifier	SPIE	6319 (63190J)	1-7	2006
28	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Izumisawa M, Takahashi K, Sato S, Ichimaru T, Takayama K	Super-characteristic x-ray generator utilizing a pipe and rod target	SPIE	6319 (63190Q)	1-6	2006
29	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Izumisawa M, Takahashi K, Sato S, Ichimaru T, Takayama K	Demonstration of enhanced K-edge angiography using a samarium target x-ray generator	SPIE	6319 (63190L)	1-6	2006
30	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S,	Characteristic X-ray Generator Utilizing Angle Dependence of Bremsstrahlung X-ray	Japanese Journal of Applied	45 (No. 4A)	2845-2849	2006

	Takayama K, Onagawa J	Distribution	Physics			
31	Takahama H, Minamino T, Hirata A, Ogai A, Asanuma H, Fujita M, Wakeno M, Tsukamoto O, Okada K, Komamura K, Takashima S, Shinozaki Y, Mori H, Mochizuki N, Kitakaze M	Granulocyte colony-stimulating factor mediates cardioprotection against ischemia/reperfusion injury via phosphatidylinositol-3-kinase/Akt pathway in canine hearts	Cardiovasc Drugs Ther	20 (3)	159-165	2006
32	Suenaga M, Kaneko Y, Kadokawa J, Nishikawa T, Mori H, Tabata M	Amphiphilic poly(N-propargylamide) with galactose and lauryloyl groups: synthesis and properties	Macromol Biosci	6 (12)	1009-1018	2006
33	Takaki H, Sakuragi S, Nagaya N, Suzuki S, Goto Y, Sato T, Sunagawa K	Postexercise VO <sub>2</sub> "Hump" phenomenon as an indicator for inducible myocardial ischemia in patients with acute anterior myocardial infarction	Int J Cardiol	111 (1)	67-74	2006
34	Takeda S, Igarashi T, Mori H, Araki S	Crystal structures of VAP1 reveal ADAMs' MDC domain architecture and its unique C-shaped scaffold	Embo J	25 (11)	2388-2396	2006
35	Tanaka M, Goto Y, Suzuki S, Morii I, Otsuka Y, Miyazaki S, Nonogi H	Postinfarction cardiac rupture despite immediate reperfusion therapy in a patient with severe aortic valve stenosis	Heart Vessels	21 (1)	59-62	2006
36	Yada T, Shimokawa H, Hiramatsu O, Haruna Y, Morita Y, Kashiwara N, Shinozaki Y, Mori H, Goto M, Ogasawara Y, Kajiyama F	Cardioprotective role of endogenous hydrogen peroxide during ischemia-reperfusion injury in canine coronary microcirculation in vivo	Am J Physiol Heart Circ Physiol	291 (3)	H1138-1146	2006
37	Yasuda S, Miyazaki S, Kanda M, Goto Y, Suzuki M, Harano Y, Nonogi H	Intensive treatment of risk factors in patients with type-2 diabetes mellitus is associated with improvement of endothelial function coupled with a reduction in the levels of plasma asymmetric dimethylarginine and endogenous inhibitor of nitric oxide synthase	Eur Heart J	27 (10)	1159-1165	2006
38	Taguchi A, Myojin K, Matsuyama T	脳卒中に対する再生医療的技術を用いた治療法の開発に関する研究	脳卒中	28 (3)	433-436	2006
39	竹下聡	閉塞性動脈硬化症、循環器疾患の早期発見の最前線	モダンフィジシャン	26	782	2006
40	竹下聡, 知久正明	微小血管造影－新生血管描出への応用－	Cardiac Practice	17	387-390	2006
41	菅弘之, 盛英三, 馬場嘉信, 杉町勝	ナノメディシン・プロジェクト－厚生労働省指定型ナノメディシン・プロジェクトを中心にして－	分子心血管病	7(4)	327-339	2006

42	盛英三, 武田壮一, 五十嵐智子, 柴田洋之	特発性心筋症の原因解明と治療法開発に向けた構造生物学的アプローチ	医学のあゆみ	217 (8)	819-824	2006
43	盛英三, 武田壮一, 若林繁夫, 井上裕康, ユーセフベンアマー, 松原孝宜, 五十嵐智子, 柴田洋之	疾患関連蛋白のサブナノ構造イメージングと分子標的薬剤の開発; ナノイメージング構造	分子心血管病	7(4)	340-346	2006
44	盛英三, 望月直樹, 武田壮一, 井上裕康, 中村俊, 土屋利江	特集: ナノテクノロジーと医療 ナノレベルイメージングによる分子構造と機能の解析	日本臨床	64	358-364	2006
45	Ben Ammar Y, Takeda S, Sugawara M, Miyano M, Mori H, Wakabayashi S	Crystallization and preliminary crystallographic analysis of the human calcineurin homologous protein CHP2 bound to the cytoplasmic region of the Na <sup>+</sup> /H <sup>+</sup> exchanger NHE1	Acta Cryst. F	F61	956-958	2005
46	Fujii T, Nagaya N, Iwase T, Murakami S, Miyahara Y, Nishigami K, Ishibashi-Ueda H, Shirai M, Itoh T, Ishino K, Sano S, Kangawa K, Mori H	Adrenomedullin enhances therapeutic potency of bone marrow transplantation for myocardial infarction in rats	Am J Physiol Heart Circ Physiol	288 (3)	H1444-1450	2005
47	Hattan N, Kawaguchi H, Ando K, Kuwabara E, Fujita J, Murata M, Suematsu M, Mori H, Fukuda K	Purified cardiomyocytes from bone marrow mesenchymal stem cells produce stable intracardiac grafts in mice	Cardiovasc Res	65 (2)	334-344	2005
48	Hirata A, Minamino T, Asanuma H, Sanada S, Fujita M, Tsukamoto O, Wakeno M, Myoishi M, Okada K, Koyama H, Komamura K, Takashima S, Shinozaki Y, Mori H, Tomoike H, Hori M, Kitakaze M	Erythropoietin just before reperfusion reduces both lethal arrhythmias and infarct size via the phosphatidylinositol-3 kinase-dependent pathway in canine hearts	Cardiovasc Drugs Ther	19 (1)	33-40	2005
49	Ichimaru T, Sato E, Tanaka E, Mori H, Kawai T, Sato S, Takayama K	Quasi-monochromatic fine polycapillary imaging utilizing a computed radiography system	Bull. Health, Sci. Hirosaki	4	83-91	2005
50	Ichimaru T, Yamadera A, Sato E, Tanaka E, Mori H, Kawai T, Sato S, Takayama K	Cone-beam K-edge angiography utilizing cerium x-ray tube in conjunction with cerium oxide filter	Bull. Health, Sci. Hirosaki	4	93-100	2005
51	Iwanaga Y, Nishi I, Ono K, Takagi S, Tsutsumi Y, Ozaki M, Noguchi T, Takaki H, Iwai N, Nonogi H, Goto Y	Angiotensin-converting enzyme genotype is not associated with exercise capacity or the training effect of cardiac rehabilitation in patients after acute myocardial infarction	Circ J	69 (11)	1315-1319	2005
52	Kajimoto K, Shioji K, Ishida C, Iwanaga Y, Kokubo Y, Tomoike H,	Validation of the association between the gene encoding 5-lipoxygenase-activating	Circ J	69 (9)	1029-1034	2005



	Miyazaki S, Nonogi H, Goto Y, Iwai N	protein and myocardial infarction in a Japanese population				
53	Kajimoto K, Shioji K, Tago N, Tomoike H, Nonogi H, Goto Y, Iwai N	Assessment of MEF2A mutations in myocardial infarction in Japanese patients	Circ J	69 (10)	1192-1195	2005
54	Kawada T, Yamazaki T, Akiyama T, Shishido T, Mori H, Sugimachi M	Myocardial interstitial choline and glutamate levels during acute myocardial ischaemia and local ouabain administration	Acta Physiol Scand	184 (3)	187-193	2005
55	Kitagawa H, Yamazaki T, Akiyama T, Sugimachi M, Sunagawa K, Mori H	Microdialysis separately monitors myocardial interstitial myoglobin during ischemia and reperfusion	Am J Physiol Heart Circ Physiol	289 (2)	H924-930	2005
56	Kitano M, Echigo S, et al.	Steep stent's angle to the reference vessel promotes neointima	Congenital Cardiology Today	3	1-5	2005
57	Kuroko Y, Fujii T, Yamazaki T, Akiyama T, Ishino K, Sano S, Mori H	Contribution of catechol O-methyltransferase to the removal of accumulated interstitial catecholamines evoked by myocardial ischemia	Neurosci Lett	388 (2)	61-64	2005
58	Nagaya N, Kangawa K, Itoh T, Iwase T, Murakami S, Miyahara Y, Fujii T, Uematsu M, Ohgushi H, Yamagishi M, Tokudome T, Mori H, Miyatake K, Kitamura S	Transplantation of mesenchymal stem cells improves cardiac function in a rat model of dilated cardiomyopathy	Circulation	112 (8)	1128-1135	2005
59	Nagaya N, Mori H, Murakami S, Kangawa K, Kitamura S	Adrenomedullin: angiogenesis and gene therapy	Am J Physiol Regul Integr Comp Physiol	288 (6)	R1432-1437	2005
60	Obara H, Sato E, Hayasi Y, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Takayama K, Ido H	Superposition of x-ray spectra using a brass-target plasma triode	SPIE	5920 (59200 W)	1-8	2005
61	Obara H, Sato E, Tanaka E, Mori H, Kawai T, Sato S, Ojima H, Takayama K, Ido H	Superposition of x-ray spectra using double-target plasma triode	SPIE	5580	824-831	2005
62	Sagae M, Sato E, Obara H, Tanaka E, Mori H, Kawai T, Sato S, Ojima H, Takayama K, Ido H	Intense quasi-monochromatic flash x-ray generator utilizing molybdenum-target diode	SPIE	5580	674-680	2005
63	Sagae M, Sato E, Tanaka E, Hayasi Y, Mori H, Kawai T, Ichimaru T, Sato S, Takayama K, Ido H	Quasi-Monochromatic X-Ray Generator Utilizing Graphite Cathode Diode with Transmission-Type Molybdenum Target	Jpn. J. Appl. Phys.	44 (1A)	446-449	2005
64	Sato E, Germer R, Tanaka E, Mori H, Kawai T, Ichimaru T,	Quasi-monochromatic cerium flash angiography	SPIE	5580	146-152	2005

	Sato S, Ojima H, Takayama K, Ido H					
65	Sato E, Hayashi Y, Germer R, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Ichimaru T, Takayama K, Onagawa J, Ido H	Monochromatic flash x-ray generator utilizing a disk-cathode silver tube	Opt. Eng.	44 (9)	6	2005
66	Sato E, Hayasi Y, Germer R, Kimura K, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Ido H	Energy-selective gadolinium angiography utilizing a stroboscopic x-ray generator	SPIE	5920 (59200 V)	1-8	2005
67	Sato E, Hayasi Y, Germer R, Kimura K, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Ido H	Enhanced K-edge plasma angiography achieved with tungsten K $\alpha$ rays utilizing gadolinium-based contrast media	SPIE	5920 (592012 )	1-8	2005
68	Sato E, Hayasi Y, Germer R, Obara H, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Ido H	Preliminary study for producing higher harmonic hard x-rays from weakly ionized copper plasma	SPIE	5920 (59200 U)	1-7	2005
69	Sato E, Hayasi Y, Germer R, Ojima H, Takayama K	Irradiation of orderly multiline spectra from linear plasma formed by vacuum discharge capillary	SPIE	5580	758-764	2005
70	Sato E, Hayasi Y, Germer R, Tanaka E, Mori H, Kawai T, Ichimaru T, Sato S, Ojima H, Takayama K, Ido H	Weakly ionized linear plasma x-ray generator with molybdenum-target triode	SPIE	5580	535-542	2005
71	Sato E, Hayasi Y, Kimura K, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Onagawa J, Ido H	Enhanced K-edge Angiography Utilizing Tantalum Plasma X-ray Generator in Conjunction with Gadolinium-Based Contrast Media	Jpn. J. Appl. Phys.	44 (12)	8716-872 1	2005
72	Sato E, Sagae M, Komatsu M, Germer R, Tanaka E, Mori H, Kawai T, Ichimaru T, Sato S, Ojima H, Takayama K, Ido H	Monochromatic flash x-ray generator utilizing copper-target diode	SPIE	5580	579-585	2005
73	Sato E, Sagae M, Obara H, Germer R, Tanaka E, Mori H, Kawai T, Ichimaru T, Sato S, Ojima H, Takayama K, Ido H	Demonstration of flash K-edge angiography utilizing gadolinium-based contrast medium	SPIE	5580	817-823	2005

74	Sato E, Tanaka E, Mori H, Kawai T, Ichimaru T, Sato S, Takayama K, Ido H	Compact monochromatic flash x-ray generator utilizing a disk-cathode molybdenum tube	Med. Phys.	32 (1)	49-54	2005
75	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Ichimaru T, Takayama K, Ido H	Monochromatic x-ray generator utilizing angle dependence of bremsstrahlung x-ray distribution	SPIE	5918 (591819)	1-7	2005
76	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Ido H	High-speed K-edge angiography achieved with tantalum K-series characteristic x rays (Honorable Mention Poster Award)	SPIE	5745	810-817	2005
77	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Sato S, Takayama K, Ido H	Preliminary experiment for producing higher harmonic x rays utilizing copper plasma triode	原子核研究	49 (5)	61-67	2005
78	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Takahashi K, Sato S, Takayama K	Measurement of cerium x-ray spectra using a cerium oxide powder filter and enhanced K-edge angiography	Ann. Rep. Iwate Med. Univ. Lib. Arts and Sci.	40	9-15	2005
79	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Takahashi K, Sato S, Takayama K	X-ray spectra from characteristic x-ray generator with a molybdenum tube	Ann. Rep. Iwate Med. Univ. Lib. Arts and Sci.	40	38724	2005
80	Sato E, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, Yamadera A, Sato S, Ito F, Takayama K, Onagawa J, Ido H	Variations in Cerium X-ray Spectra and Enhanced K-Edge Angiography	Jpn. J. Appl. Phys.	44 (11)	8204-8209	2005
81	Sato E, Tanaka E, Mori H, Kawai T, Sato S, Ojima H, Takayama K, Ido H	Energy-selective high-speed radiography utilizing stroboscopic x-ray generator	SPIE	5580	765-771	2005
82	Sato E, Tanaka E, Mori H, Kawai T, Sato S, Takayama K	Clean monochromatic x-ray irradiation from weakly ionized linear copper plasma	Opt. Eng.	44 (049002)	1-6	2005
83	Sato E, Tanaka E, Mori H, Kawai T, Sato S, Takayama K	High-speed enhanced K-edge angiography utilizing cerium plasma x-ray generator	Opt. Eng.	44 (049001)	1-6	2005
84	Sato E, Tanaka E, Mori H, Kawakami H, Kawai T, Inoue T, Ogawa A, Sato S, Ichimaru T, Takayama K, Ido H	Enhanced magnification angiography including phase-contrast effect using a 100- $\mu$ m focus x-ray tube	SPIE	5918 (591811)	1-9	2005
85	Sato E, Yamadera A, Ichimaru T, Tanaka E, Mori H, Kawai T, Inoue T, Ogawa A, et al.	Conventional Enhanced K-edge angiography Utilizing cerium x-ray generator	原子核研究	49	69-74	2005
86	Sato E, Yamadera A, Tanaka E, Mori H, Kawai T, Ito F, Inoue T, Ogawa A, Sato S, Takayama K, Onagawa J, Ido H	X-ray spectra from a cerium target and their application to cone beam K-edge angiography	Opt. Eng.	44 (096502)	1-6	2005
87	Schwenke DO, Pearson JT, Tsuchimochi H, Mori H, Shirai M	Exogenous nitric oxide centrally enhances pulmonary reactivity in the normal and hypertensive rat	Clin Exp Pharmacol Physiol	32 (11)	952-959	2005

88	Suzuki S, Takaki H, Yasumura Y, Sakuragi S, Takagi S, Tsutsumi Y, Aihara N, Sakamaki F, Goto Y	Assessment of quality of life with 5 different scales in patients participating in comprehensive cardiac rehabilitation after acute myocardial infarction	Circ J	69 (12)	1527-1534	2005
89	Takasugi H, Watanabe K, Ono Y, Echigo S	Improvement of left ventricular function after changing the pacing site in a child with isolated congenital complete atrioventricular block and dilated cardiomyopathy	Pediatr Cardiol	26 (1)	87-89	2005
90	Tomita H, Yazaki S, Echigo S, Kimura K, Takamuro M, Horita N, Fuse S, Tsutsumi H	Late distortion of the original Palmaz stent implanted in postoperative lesions associated with congenital heart disease	Catheter Cardiovasc Interv	65 (2)	301-305	2005
91	Tsuda E, Kamiya T, Ono Y, Kimura K, Echigo S	Dilated coronary arterial lesions in the late period after Kawasaki disease	Heart	91 (2)	177-182	2005
92	Tsuda E, Kamiya T, Ono Y, Kimura K, Kurosaki K, Echigo S	Incidence of stenotic lesions predicted by acute phase changes in coronary arterial diameter during Kawasaki disease	Pediatr Cardiol	26 (1)	73-79	2005
93	Yada T, Shimokawa H, Hiramatsu O, Kajita T, Shigeto F, Tanaka E, Shinozaki Y, Mori H, Kiyooka T, Katsura M, Ohkuma S, Goto M, Ogasawara Y, Kajiya F	Beneficial effect of hydroxyfasudil, a specific Rho-kinase inhibitor, on ischemia/reperfusion injury in canine coronary microcirculation in vivo	J Am Coll Cardiol	45 (4)	599-607	2005
94	Yasuda K, Hayashi G, Ohuchi H, Ono Y, Yutani C, Echigo S	Dilated cardiomyopathy after pacemaker implantation in complete heart block	Pediatr Int	47 (2)	121-125	2005
95	竹下聡	血管新生療法	治療学	39	775-777	2005
96	宮原義典, 盛英三, 永谷憲歳	日本型移植医療をどう作るかー細胞・組織・臓器ー 心血管疾患における細胞ー遺伝子ハイブリッド治療(総説)	循環器専門医	13	33-39	2005
97	佐藤英一, 林保臣, 小原春雄, 田中越郎, 盛英三, 河合敏昭, 井上敬, 小川彰, 佐藤成大, 市丸俊夫, 高山和喜, 白杵辰巳, 佐藤公悦	シンクロトロンにかわる医用単色 X 線装置の開発と応用	医学物理	25 (suppl.4)	25-38	2005
98	Akiyama T, Yamazaki T, Mori H, Sunagawa K	Simultaneous monitoring of acetylcholine and catecholamine release in the in vivo rat adrenal medulla	Neurochem Int	44 (7)	497-503	2004

99	Akiyama T, Yamazaki T, Mori H, Sunagawa K	Effects of Ca <sup>2+</sup> channel antagonists on acetylcholine and catecholamine releases in the in vivo rat adrenal medulla	Am J Physiol Regul Integr Comp Physiol	287 (1)	R161-166	2004
100	Asanuma H, Minamino T, Sanada S, Takashima S, Ogita H, Ogai A, Asakura M, Liao Y, Asano Y, Shintani Y, Kim J, Shinozaki Y, Mori H, Node K, Kitamura S, Tomoike H, Hori M, Kitakaze M	β-adrenoceptor blocker carvedilol provides cardioprotection via an adenosine-dependent mechanism in ischemic canine hearts	Circulation	109 (22)	2773-2779	2004
101	Asanuma H, Sanada S, Ogai A, Minamino T, Takashima S, Asakura M, Ogita H, Shinozaki Y, Mori H, Node K, Tomoike H, Hori M, Kitakaze M	Methotrexate and MX-68, a new derivative of methotrexate, limit infarct size via adenosine-dependent mechanisms in canine hearts	J Cardiovasc Pharmacol	43 (4)	574-579	2004
102	Fujii T, Yamazaki T, Akiyama T, Sano S, Mori H	In vivo assessment of catechol O-methyltransferase activity in rabbit skeletal muscle	Auton Neurosci	111 (2)	140-143	2004
103	Fujii T, Yamazaki T, Akiyama T, Sano S, Mori H	Extraneuronal enzymatic degradation of myocardial interstitial norepinephrine in the ischemic region	Cardiovasc Res	64 (1)	125-131	2004
104	Itoh T, Nonogi H, Miyazaki S, Itoh A, Daikoku S, Morii I, Goto Y	Local delivery of argatroban for the prevention of restenosis after coronary balloon angioplasty: a prospective randomized pilot study	Circ J	68 (7)	615-622	2004
105	Kitano M, Watanabe K, Yagihara T, Echigo S	Total anomalous pulmonary venous return with the circular pulmonary venous connection: outcome of common pulmonary venous agenesis	Pediatr Cardiol	25 (4)	427-428	2004
106	Kojima S, Iwai N, Tago N, Ono K, Ohmi K, Tsujimoto G, Takagi S, Miyazaki S, Nonogi H, Goto Y	p53 Arg72Pro polymorphism of tumour suppressor protein is associated with luminal narrowing after coronary stent placement	Heart	90 (9)	1069-1070	2004
107	Nagaya N, Fujii T, Iwase T, Ohgushi H, Itoh T, Uematsu M, Yamagishi M, Mori H, Kangawa K, Kitamura S	Intravenous administration of mesenchymal stem cells improves cardiac function in rats with acute myocardial infarction through angiogenesis and myogenesis	Am J Physiol Heart Circ Physiol	287 (6)	H2670-2676	2004
108	Nagaya N, Kyotani S, Uematsu M, Ueno K, Oya H, Nakanishi N, Shirai M, Mori H, Miyatake K, Kangawa K	Effects of adrenomedullin inhalation on hemodynamics and exercise capacity in patients with idiopathic pulmonary arterial hypertension	Circulation	109 (3)	351-356	2004

109	Ohuchi H, Ohashi H, Watanabe K, Yamada O, Yagihara T, Echigo S	Blood pressure dynamics during simulated ventricular tachycardia in patients after right ventricular outflow tract reconstruction mainly for tetralogy of Fallot compared with patients after ventricular septal defect closure	Am J Cardiol	93 (11)	1445-1448, A1412	2004
110	Ohuchi H, Takasugi H, Ohashi H, Yamada O, Watanabe K, Yagihara T, Echigo S	Abnormalities of neurohormonal and cardiac autonomic nervous activities relate poorly to functional status in fontan patients	Circulation	110 (17)	2601-2608	2004
111	Pang T, Hisamitsu T, Mori H, Shigekawa M, Wakabayashi S	Role of calcineurin B homologous protein in pH regulation by the Na <sup>+</sup> /H <sup>+</sup> exchanger 1: tightly bound Ca <sup>2+</sup> ions as important structural elements	Biochemistry	43 (12)	3628-3636	2004
112	Pearson JT, Shirai M, Ito H, Tokunaga N, Tsuchimochi H, Nishiura N, Schwenke DO, Ishibashi-Ueda H, Akiyama R, Mori H, Kangawa K, Suga H, Yagi N	In situ measurements of crossbridge dynamics and lattice spacing in rat hearts by x-ray diffraction: sensitivity to regional ischemia	Circulation	109 (24)	2976-2979	2004
113	Sagae M, Sato E, Hayashi Y, Tanaka E, Mori H, Kawai T, Obara H, Ichimaru T, Takayama K, Ido H	Monochromatic polycapillary imaging utilizing a computed radiography system	Igaku Butsuri	24 (2)	78-85	2004
114	Sanada S, Asanuma H, Minamino T, Node K, Takashima S, Okuda H, Shinozaki Y, Ogai A, Fujita M, Hirata A, Kim J, Asano Y, Mori H, Tomoike H, Kitamura S, Hori M, Kitakaze M	Optimal windows of statin use for immediate infarct limitation: 5'-nucleotidase as another downstream molecule of phosphatidylinositol 3-kinase	Circulation	110 (15)	2143-2149	2004
115	Sato E, Hayasi Y, Germer R, Koorikawa Y, Murakami K, Tanaka E, Mori H, Kawai T, Ichimaru T, Obata F, Takahashi K, Sato S, Takayama K, Ido H	Weakly ionized cerium plasma radiography	SPIE	5210	39072	2004
116	Sato E, Hayasi Y, Germer R, Murakami K, Koorikawa Y, Tanaka E, Mori H, Kawai T, Ichimaru T, Obata F, Takahashi K, Sato S, Takayama K, Ido H	Weakly ionized plasma flash x-ray generator and its distinctive characteristics	SPIE	5196	383-392	2004

117	Sato E, Hayasi Y, Germer R, Tanaka E, Mori H, Kawai T, Ichimaru T, Ido H	Sharp characteristic X-ray irradiation from weakly ionized linear plasma	J. Electron Spectroscopy and Related Phenomena	137-140	713-720	2004
118	Sato E, Hayasi Y, Germer R, Tanaka E, Mori H, Kawai T, Ichimaru T, Sato S, Takayama K, Ido H	Portable X-ray generator utilizing a cerium-target radiation tube for angiography	J. Electron Spectroscopy and Related Phenomena	137-140	699-704	2004
119	Sato E, Hayasi Y, Germer R, Tanaka E, Mori H, Kawai T, Ichimaru T, Sato S, Takayama K, Ido H	Quasi-monochromatic parallel radiography utilizing a computed radiography system	J. Electron Spectroscopy and Related Phenomena	137-140	705-711	2004
120	Sato E, Hayasi Y, Tanaka E, Mori H, Kawai T, Ichimaru T, Obata F, Takahashi K, Sato S, Takayama K, Ido H	Quasi-monochromatic polycapillary imaging utilizing a computed radiography system	SPIE	5196	412-420	2004
121	Sato E, Obata F, Takahashi K, Sato S, Tanaka E, Mori H, Kawai T, Ichimaru T, Takayama K, Ido H	Extremely soft x-ray generator and its applications	Proc. SPIE Int. Soc. Opt. Eng.	5537	38-44	2004
122	Sato E, Sagae M, Tanaka E, Hayasi Y, Germer R, Mori H, Kawai T, Ichimaru T, Sato S, Takayama K, Ido H	Quasi-Monochromatic Flash X-Ray Generator Utilizing Disk-Cathode Molybdenum Tube	Jpn. J. Appl. Phys.	43 (10)	7324-7328	2004
123	Sato E, Tanaka E, Mori H, Kawai T, Ichimaru T, Sato S, Takayama K, Ido H	Demonstration of enhanced K-edge angiography using a cerium target x-ray generator	Med Phys	31 (11)	3017-3021	2004
124	Sato E, Tanaka E, Mori H, Kawai T, Ichimaru T, Sato S, Takayama K, Ido H	Bremsstrahlung x-ray spectra for enhanced K-edge angiography	Ann. Rep. Iwate Med. Univ. Lib. Arts and Sci.	39	39038	2004
125	Sato E, Tanaka E, Mori H, Kawai T, Ito F, Ichimaru T, Sato S, Takayama K, Ido H	Compact x-ray generator utilizing cerium-target tube for angiography	SPIE	5537)	75-81	2004
126	Sato E, Yamadera A, Sagae M, Ichimaru T, Morino Y, Ikeda M, Sasaki C, Tanaka E, Mori H, Kawai T, Ito F, Sato S, et al.	Cerium x-ray spectra without filtering and their application to high-contrast angiography	Ann. Rep. Iwate Med. Univ. Lib. Arts and Sci.	39	38726	2004
127	Takagi S, Goto Y, Hirose E, Terashima M, Sakuragi S, Suzuki S, Tsutsumi Y, Miyazaki S, Nonogi H	Successful treatment of refractory vasospastic angina with corticosteroids: coronary arterial hyperactivity caused by local inflammation?	Circ J	68 (1)	17-22	2004

128	Takagi S, Sakurai S, Baba T, Takaki H, Aihara N, Yasumura Y, Sumida H, Nonogi H, Goto Y	Predictors of left ventricular remodeling in patients with acute myocardial infarction participating in cardiac rehabilitation	Circ J	68 (3)	214-219	2004
129	Tokunaga N, Nagaya N, Shirai M, Tanaka E, Ishibashi-Ueda H, Harada-Shiba M, Kanda M, Ito T, Shimizu W, Tabata Y, Uematsu M, Nishigami K, Sano S, Kangawa K, Mori H	Adrenomedullin gene transfer induces therapeutic angiogenesis in a rabbit model of chronic hind limb ischemia: benefits of a novel nonviral vector, gelatin	Circulation	109 (4)	526-531	2004
130	Watanabe K, Fukuchi K, Echigo S	Early sympathetic reinnervation demonstrated by iodine-123 metaiodobenzylguanidine imaging in a child after cardiac transplantation	Pediatr Cardiol	25 (5)	568-569	2004
131	Yasuda S, Goto Y, Takaki H, Asaumi Y, Baba T, Miyazaki S, Nonogi H	Exercise-induced hepatocyte growth factor production in patients after acute myocardial infarction: its relationship to exercise capacity and brain natriuretic peptide levels	Circ J	68 (4)	304-307	2004
132	知久正明, 西上和宏, 盛英三, 河合敏昭, 望月亮	【血管の先進映像医学】病院設置型微小血管造影装置の開発と臨床応用の可能性 (解説)	血管医学	5 (1)	17-25	2004
133	宮原義典, 永谷憲歳, 盛英三	遺伝子と細胞のハイブリッド化による血管新生の制御と微小血管造影法による新生血管の可視化	Biotherapy	18	449-456	2004



H. Mori  
H. Matsuda (Eds.)




Cardiovascular Regeneration Therapies  
Using Tissue Engineering Approaches

**Cardiovascular Regeneration Therapies  
Using Tissue Engineering Approaches**

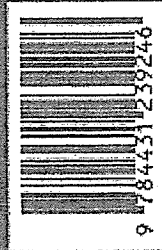
The fact that the cardiovascular system transports oxygen and nutrients to all parts of the body makes any threat to its well-being a serious hazard to organs, tissues, and cells. This fundamental truth underlines the importance of research into cardiovascular regeneration and, therefore, of this collection outlining the latest developments in the field. With input from many of the leading researchers and practitioners, this book describes techniques for therapeutic angiogenesis and vasculogenesis for the treatment of ischemic diseases and examines the current approaches to angiogenic cytokines, cardiovascular stem cells, and tissue-engineering tools. The latest clinical results using bone marrow-derived mononuclear cell therapy for intractable circulatory disorders are also covered. This body of work will be a valuable resource for professionals in the fields of cardiovascular surgery, regenerative medicine, and tissue engineering.

H. Mori • H. Matsuda (Eds.)

**Cardiovascular Regeneration  
Therapies Using Tissue  
Engineering Approaches**

 Springer

ISBN 4-431-23924-3



springerline.com

## Contents

Preface.....	V
--------------	---

### Chapter 1: VASCULAR PRECURSOR CELLS AND THEIR POTENTIATION

EPC and Their Potentiation by Adenovirus Gene Delivery Iwaguro H and Asahara T .....	3
Potentiation of Regenerative Therapy by Non-Viral Vector, Gelatin Hydrogel Nagaya N, Fukuyama N, Tabata Y, Mori H .....	17
Regeneration of Myocardium Using Bone Marrow Cells Tomita S and Nakatani T .....	31

### Chapter 2: DEVELOPMENT OF MYOCARDIAL SHEETS AND THEIR CELL SOURCES

Cell Sheet Technology for Myocardial Tissue Engineering Shimizu T, Sekine H, Isoi Y, Yamato M, Kikuchi A, Okano T .....	45
Myocardial Regeneration Therapy with Tissue Implantation of Autologous Myoblast Sheets for Severe Impaired Heart Failure Sawa Y, Memori I, and Matsuda H .....	53
Cardiovascular Cell Differentiation from ES Cells Yamashita J .....	67

### Chapter 3: HYBRID TISSUES

Preparation and Recellularization of Tissue-Engineered Bioscaffold for Heart Valve Replacement Fujisato T, Minatoya K, Yamazaki S, Meng Y, Niwaya K, Kishida A, Nakatani T, Kitamura S .....	83
---	----

Biotube Technology for a Novel Tissue-Engineered Blood Vessels Ishibashi-Ueda H and Nakayama Y .....	95
Clinical Application of Tissue-Engineered Blood Vessels Matsumura G and Shin'oka T .....	105

#### **Chapter 4: NEW ASPECTS OF ANGIOGENESIS**

Vascular Regeneration and Remodeling by Circulating Progenitor Cells Sata M and Nagai R .....	117
Gene Therapy with Hepatocyte Growth Factor for Angiogenesis in Severe Pulmonary Vascular Disease Ono M, Sawa Y, and Matsuda H .....	129
Basic Fibroblast Growth Factor and Angiogenesis Marui A, Doi K, Tambara K, Sakakibara Y, Ueyama K, Iwakura A, Yamamoto M, Ikeda T, Tabata Y, Komeda M .....	145
Gene Therapy for Angiogenesis under a Ventricular Assist System Takewa Y, Shirakawa Y, Taenaka Y, Tatsumi E, Sawa Y, Matsuda H, Kitamura S, Takano H .....	157
The Role of Vascular Endothelial Growth Factor (VEGF) on Therapeutic Angiogenesis Using Bone Marrow Cells Maeda Y and Ikeda U .....	173

#### **Chapter 5: CLINICAL RESULTS OF THERAPEUTIC ANGIOGENESIS AND VASCULOGENESIS**

Clinical Survey of Cell Therapy in Japan Katsuda Y, Takeshita Y, Arima K, Saitoh Y, Imaizumi T, Asahara T, Nakatani T, Okano T, Kishida A, Ueda H, Shin'oka T, Nagai R, Sawa Y, Komeda M, Takewa Y, Matsuda H, Mori H .....	183
---	-----

A Novel Micro-Angiography Detecting Angiogenesis, Application for Autologous Bone Marrow Mononuclear Cells Transplantation in the Patients with Critical Limb Ischemia Nishigami K, Nakatani T, Chiku M, Mori H .....	191
Angiogenesis Induced by Intramyocardial Implantation of Autologous Bone Marrow Mononuclear Cells for the Treatment of Ischemic Heart Disease Li T, Matsuzaki M, and Hamano K .....	201
Effect of Bone Marrow Transplantation in Patients with Critical Limb Ischemia Katsuda Y, Takeshita Y, Arima K, Saitoh Y, Sasaki K, Shintani S, Murohara T, Imaizumi T .....	213
Therapeutic Angiogenesis for a Patient with Arteriosclerosis Obliterans by Autologous Transplantation of Bone Marrow Mononuclear Cells Fujimoto K, Miyagi H, Miyao Y, Kajiwara I, Oe Y, Kawano F, Hidaka M .....	221
Autologous Bone Marrow Implantation for Burger's Disease Ohtani M, Soma T, and Taguchi A .....	227
Closing Remarks .....	235
Index .....	237