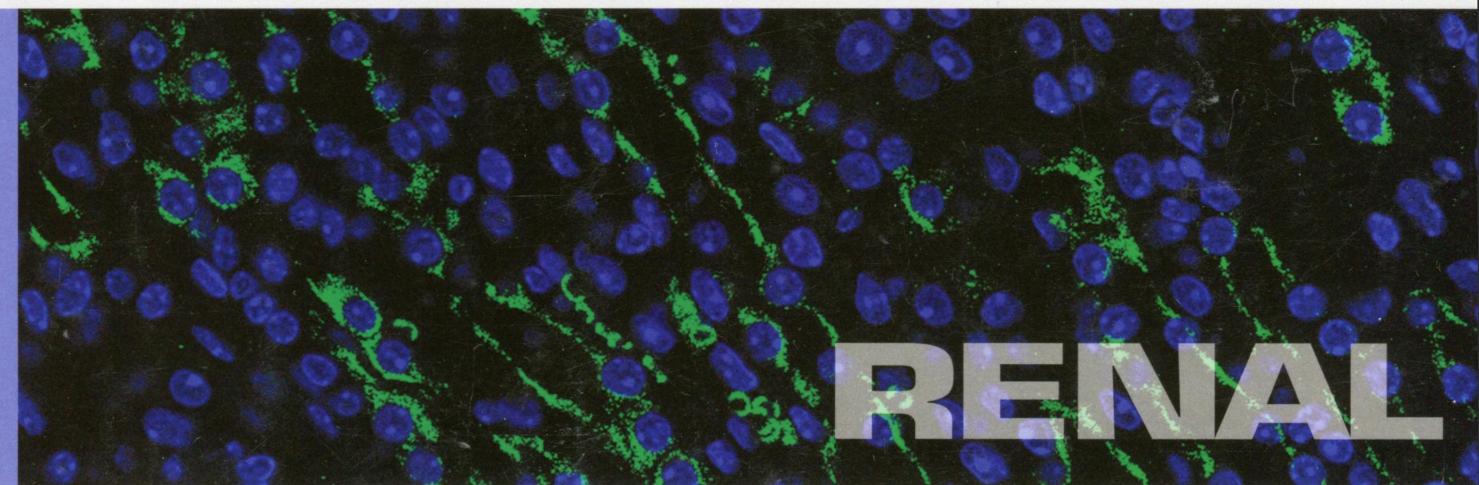
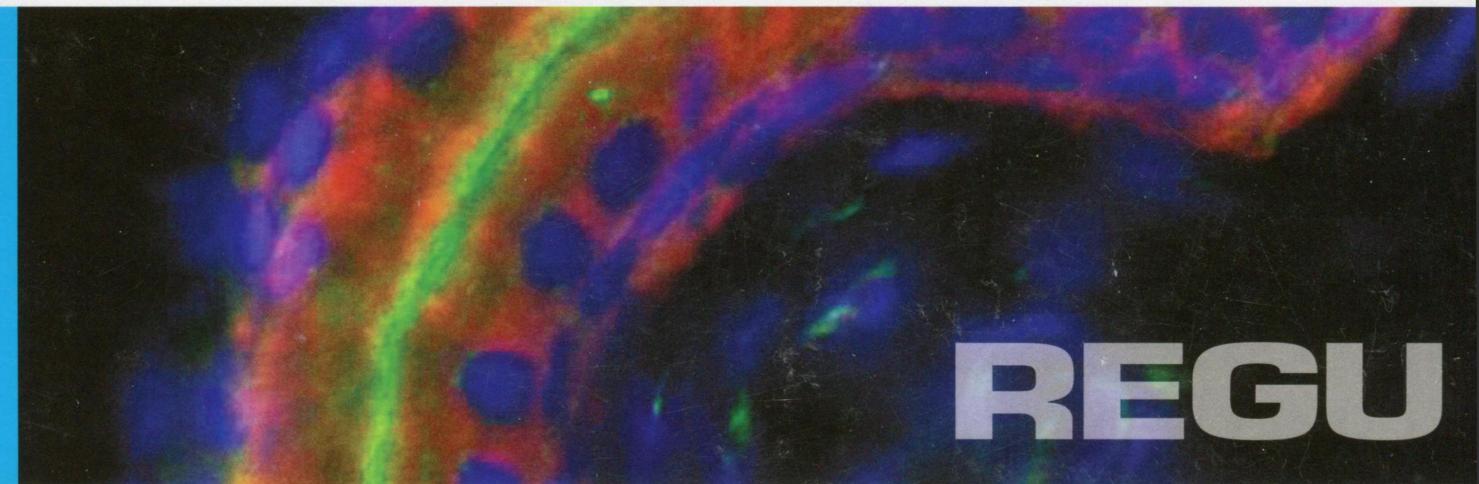
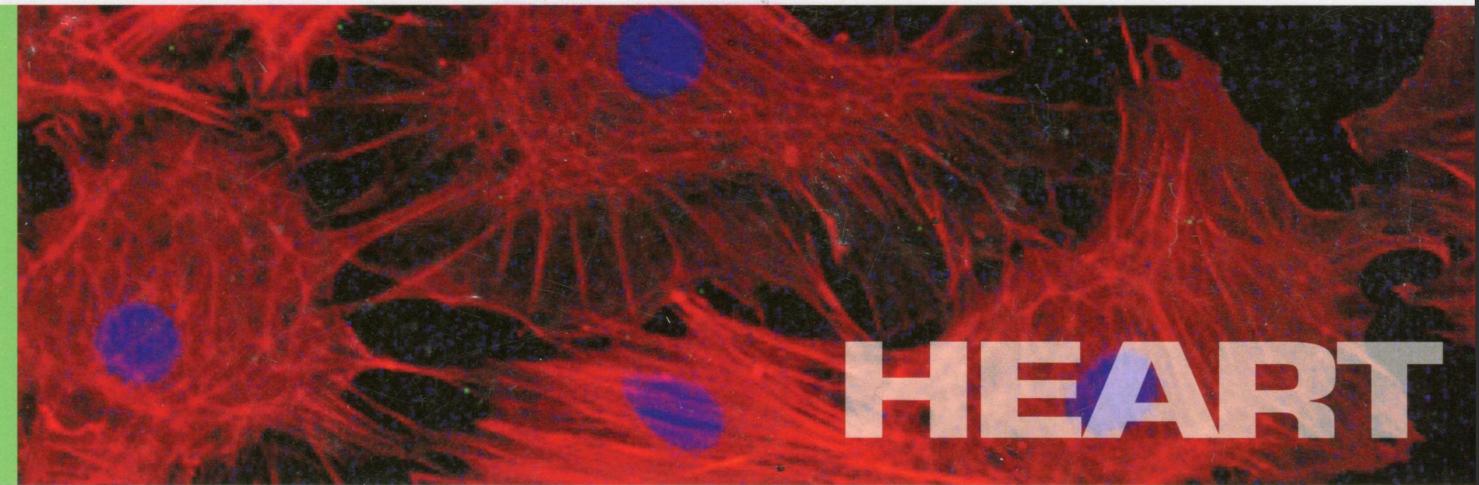


*AMERICAN JOURNAL OF
PHYSIOLOGY*

A47/jp1
volume 306

no. 4

April 2014



2 of 2

PUBLISHED BY THE AMERICAN PHYSIOLOGICAL SOCIETY

American Journal of Physiology- Heart and Circulatory Physiology

April 1, 2014

CALL FOR PAPERS Sex and Gender Differences in Cardiovascular Physiology—Back to the Basics

Role of aromatase in sex-specific cerebrovascular endothelial function in mice <i>K. L. Zuloaga, C. M. Davis, W. Zhang, and N. J. Alkayed</i>	H929
Cardiac contraction, calcium transients, and myofilament calcium sensitivity fluctuate with the estrous cycle in young adult female mice <i>J. K. MacDonald, W. G. Pyle, C. J. Reitz, and S. E. Howlett</i>	H938

VASCULAR BIOLOGY AND MICROCIRCULATION

Altered reactivity and nitric oxide signaling in the isolated thoracic duct from an ovine model of congenital heart disease with increased pulmonary blood flow <i>S. A. Datar, P. E. Oishi, W. Gong, S. H. Bennett, C. E. Sun, M. Johengen, J. Maki, R. C. Johnson, G. W. Raff, and J. R. Fineman</i>	H954
Aerobic exercise acutely prevents the endothelial dysfunction induced by mental stress among subjects with metabolic syndrome: the role of shear rate <i>A. R. K. Sales, I. A. Fernandes, N. G. Rocha, L. S. Costa, H. N. M. Rocha, J. D. M. Mattos, L. C. Vianna, B. M. Silva, and A. C. L. Nóbrega</i>	H963
Enhanced p22 ^{phox} expression impairs vascular function through p38 and ERK1/2 MAP kinase-dependent mechanisms in type 2 diabetic mice <i>M. Kassan, S.-K. Choi, M. Galán, Y.-H. Lee, M. Trebak, and K. Matrougui</i>	H972
Opposing roles of smooth muscle BK channels and ryanodine receptors in the regulation of nerve-evoked constriction of mesenteric resistance arteries <i>G. Krishnamoorthy, S. K. Sonkusare, T. J. Heppner, and M. T. Nelson</i>	H981
Enhanced large conductance K ⁺ channel activity contributes to the impaired myogenic response in the cerebral vasculature of Fawn Hooded Hypertensive rats <i>M. R. Pabbidi, O. Mazur, F. Fan, J. M. Farley, D. Gebremedhin, D. R. Harder, and R. J. Roman</i>	H989
Mechanisms of vascular dysfunction in mice with endothelium-specific deletion of the PPAR-δ gene <i>L. V. d'Uscio, T. He, A. V. R. Santhanam, L.-J. Tai, R. M. Evans, and Z. S. Katusic</i>	H1001
Albumin modulates S1P delivery from red blood cells in perfused microvessels: mechanism of the protein effect <i>R. H. Adamson, J. F. Clark, M. Radeva, A. Kheirolooom, K. W. Ferrara, and F. E. Curry</i>	H1011

ENERGETICS AND METABOLISM

Impaired left ventricular mechanical and energetic function in mice after cardiomyocyte-specific excision of <i>Serca2</i> <i>N. T. Boardman, J. M. Aronsen, W. E. Louch, I. Sjaastad, F. Willoch, G. Christensen, O. Sejersted, and E. Aasum</i>	H1018
--	-------

SIGNALING AND STRESS RESPONSE

Interleukin-18 mediates interleukin-1-induced cardiac dysfunction

*S. Toldo, E. Mezzaroma, L. O'Brien, C. Marchetti, I. M. Seropian, N. F. Voelkel,
B. W. Van Tassell, C. A. Dinarello, and A. Abbate*

H1025

CARDIOVASCULAR NEUROHORMONAL REGULATION

Novel role of aminopeptidase-A in angiotensin-(1–7) metabolism post myocardial infarction

M. S. Alghamri, M. Morris, J. G. Meszaros, K. M. Elased, and N. Grobe

H1032

CARDIAC EXCITATION AND CONTRACTION

Mechanism of reentry induction by a 9-V battery in rabbit ventricles

*M. J. Bishop, R. A. B. Burton, M. Kalla, K. Nanthakumar, G. Plank, G. Bub,
and E. J. Vigmond*

H1041

Type 2 diabetes induces subendocardium-predominant reduction in transient outward K^+ current with downregulation of Kv4.2 and KChIP2

*T. Sato, T. Kobayashi, A. Kuno, T. Miki, M. Tanno, H. Kouzu, T. Itoh, S. Ishikawa,
T. Kojima, T. Miura, and N. Tohse*

H1054

INTEGRATIVE CARDIOVASCULAR PHYSIOLOGY AND PATHOPHYSIOLOGY

Induced overexpression of phospholemmann S68E mutant improves cardiac contractility and mortality after ischemia-reperfusion

*J. Wang, J. Song, E. Gao, X.-Q. Zhang, T. Gu, D. Yu, W. J. Koch, A. M. Feldman,
and J. Y. Cheung*

H1066

Injection of autologous bone marrow cells in hyaluronan hydrogel improves cardiac performance after infarction in pigs

C.-H. Chen, M.-Y. Chang, S.-S. Wang, and P. C. H. Hsieh

H1078

Obesity-metabolic derangement exacerbates cardiomyocyte loss distal to moderate coronary artery stenosis in pigs without affecting global cardiac function

*Z.-L. Li, B. Ebrahimi, X. Zhang, A. Eirin, J. R. Woppard, H. Tang, A. Lerman,
S.-M. Wang, and L. O. Lerman*

H1087

April 15, 2014

EDITORIAL

The American Journal of Physiology-Heart and Circulatory Physiology: a long history, a bright future

I. H. Zucker and K. H. Keehan

H1103

CALL FOR PAPERS

Sex and Gender Differences in Cardiovascular Physiology—Back to the Basics

Age and sex differences in vascular responsiveness in healthy and trauma patients: contribution of estrogen receptor-mediated Rho kinase and PKC pathways

*T. Li, X. Xiao, J. Zhang, Y. Zhu, Y. Hu, J. Zang, K. Lu, T. Yang, H. Ge, X. Peng,
D. Lan, and L. Liu*

H1105

VASCULAR BIOLOGY AND MICROCIRCULATION

Hyperhomocysteinemia attenuates angiogenesis through reduction of HIF-1 α and PGC-1 α levels in muscle fibers during hindlimb ischemia (**Translational Physiology**)

S. Veeranki, S. Givimani, S. Pushpakumar, and S. C. Tyagi

H1116

Exercise performance and peripheral vascular insufficiency improve with AMPK activation in high-fat diet-fed mice

*K. A. Baltgalvis, K. White, W. Li, M. D. Claypool, W. Lang, R. Alcantara, B. K. Singh,
A. M. Friera, J. McLaughlin, D. Hansen, K. McCaughey, H. Nguyen, I. J. Smith,
G. Godinez, S. J. Shaw, D. Goff, R. Singh, V. Markovtsov, T.-Q. Sun, Y. Jenkins,
G. Uy, Y. Li, A. Pan, T. Gururaja, D. Lau, G. Park, Y. Hitoshi, D. G. Payan,
and T. M. Kinsella*

H1128

Soluble epoxide hydrolase-dependent regulation of myogenic response and blood pressure

*D. Sun, A. J. Cuevas, K. Gotlinger, S. H. Hwang, B. D. Hammock,
M. L. Schwartzman, and A. Huang*

H1146

ENERGETICS AND METABOLISM

Effects of continuous triiodothyronine infusion on the tricarboxylic acid cycle in the normal immature swine heart under extracorporeal membrane oxygenation *in vivo*

M. Kajimoto, C. M. O'Kelly Priddy, D. R. Ledee, C. Xu, N. Isern, A. K. Olson, and M. A. Portman

H1164

MUSCLE MECHANICS AND VENTRICULAR FUNCTION

Length-dependent activation is modulated by cardiac troponin I bisphosphorylation at Ser23 and Ser24 but not by Thr143 phosphorylation

P. J. M. Wijnker, V. Sequeira, D. B. Foster, Y. Li, C. G. dos Remedios, A. M. Murphy, G. J. M. Stienen, and J. van der Velden

H1171

SIGNALING AND STRESS RESPONSE

Osteopontin stimulates apoptosis in adult cardiac myocytes via the involvement of CD44 receptors, mitochondrial death pathway, and endoplasmic reticulum stress

S. Dalal, Q. Zha, C. R. Daniels, R. J. Steagall, W. L. Joyner, A.-P. Gadeau, M. Singh, and K. Singh

H1182

MiRNA-155 targets myosin light chain kinase and modulates actin cytoskeleton organization in endothelial cells

M. Weber, S. Kim, N. Patterson, K. Rooney, and C. D. Searles

H1192

CARDIAC EXCITATION AND CONTRACTION

Investigations of the Na_vβ1b sodium channel subunit in human ventricle; functional characterization of the H162P Brugada syndrome mutant

L. Yuan, J. T. Koivumäki, B. Liang, L. G. Lorentzen, C. Tang, M. N. Andersen, J. H. Svendsen, J. Tfelt-Hansen, M. Maleckar, N. Schmitt, M. S. Olesen, and T. Jespersen

H1204

INTEGRATIVE CARDIOVASCULAR PHYSIOLOGY AND PATHOPHYSIOLOGY

Cardiac electrophysiology and the susceptibility to sustained ventricular tachycardia in intact, conscious mice (**Translational Physiology**)

H. L. Lujan and S. E. DiCarlo

H1213

Adaptive right ventricular performance in response to acutely increased afterload in a lamb model of congenital heart disease: evidence for enhanced Anrep effect

R. C. Johnson, S. A. Datar, P. E. Oishi, S. Bennett, J. Maki, C. Sun, M. Johengen, Y. He, G. W. Raff, A. N. Redington, and J. R. Fineman

H1222

RAPID REPORTS

Stromal interaction molecule 1 is essential for normal cardiac homeostasis through modulation of ER and mitochondrial function

H. E. Collins, L. He, L. Zou, J. Qu, L. Zhou, S. H. Litovsky, Q. Yang, M. E. Young, R. B. Marchase, and J. C. Chatham

H1231

Cardiomyocyte glycophagy is regulated by insulin and exposure to high extracellular glucose

K. M. Mellor, U. Varma, D. I. Stapleton, and L. M. D. Delbridge

H1240

PDE2-mediated cAMP hydrolysis accelerates cardiac fibroblast to myofibroblast conversion and is antagonized by exogenous activation of cGMP signaling pathways

C. Vettel, S. Lämmle, S. Ewens, C. Cervirgen, J. Emons, A. Ongherth, M. Dewenter, D. Lindner, D. Westermann, V. O. Nikolaev, S. Lutz, W. H. Zimmermann, and A. El-Armouche

H1246

American Journal of Physiology- Regulatory, Integrative and Comparative Physiology

April 1, 2014

EDITORIAL FOCUS

Hindbrain energy status controls hypothalamic metabolic and neuropeptide signals. Focus on "Hindbrain lactostasis regulates hypothalamic AMPK activity and hypothalamic metabolic neurotransmitter mRNA and protein responses to hypoglycemia"

H. J. Grill

R439

CALL FOR PAPERS Integrative and Translational Physiology: Inflammation and Immunity in Organ System Physiology

Placental restriction of fetal growth reduces cutaneous responses to antigen after sensitization in sheep

*A. L. Wooldridge, R. J. Bischof, E. N. Meeusen, H. Liu, G. K. Heinemann,
D. S. Hunter, L. C. Giles, K. L. Kind, J. A. Owens, V. L. Clifton, and K. L. Gatford*

R441

CALL FOR PAPERS Integrative and Translational Physiology: Integrative Aspects of Energy Homeostasis and Metabolic Diseases

Supraoptic oxytocin and vasopressin neurons function as glucose and metabolic sensors

Z. Song, B. E. Levin, W. Stevens, and C. D. Sladek

R447

RESEARCH

NEURAL CONTROL

Hindbrain lactostasis regulates hypothalamic AMPK activity and metabolic neurotransmitter mRNA and protein responses to hypoglycemia

A. D. Gujar, B. A. Ibrahim, P. Tamrakar, A. K. Cherian, and K. P. Briski

R457

PHYSICAL ACTIVITY AND INACTIVITY

EUK-134 ameliorates nNOS μ translocation and skeletal muscle fiber atrophy during short-term mechanical unloading

*J. M. Lawler, M. Kunst, J. M. Hord, Y. Lee, K. Joshi, R. E. Botchlett, A. Ramirez,
and D. A. Martinez*

R470

Effects of β -hydroxy- β -methylbutyrate free acid and cold water immersion on expression of CR3 and MIP-1 β following resistance exercise

*A. M. Gonzalez, M. S. Fragala, A. R. Jajtner, J. R. Townsend, A. J. Wells, K. S. Beyer,
C. H. Boone, G. J. Pruna, G. T. Mangine, J. D. Bohner, D. H. Fukuda, J. R. Stout,
and J. R. Hoffman*

R483

Biomarkers of vascular function in premenopausal and recent postmenopausal women of similar age: effect of exercise training

M. Nyberg, K. Seidelin, T. R. Andersen, N. N. Overby, Y. Hellsten, and J. Bangsbo

R510

OBESITY, DIABETES AND ENERGY HOMEOSTASIS

Hindbrain lactostasis regulates hypothalamic AMPK activity and metabolic neurotransmitter mRNA and protein responses to hypoglycemia

A. D. Gujar, B. A. Ibrahim, P. Tamrakar, A. K. Cherian, and K. P. Briski

R457

Long-term metabolic benefits of exenatide in mice are mediated solely via the known glucagon-like peptide 1 receptor

K. Tatarakiewicz, E. J. Sablan, C. J. Polizzi, C. Villegas, and D. G. Parkes

R490

Maternal high-fat diet during pregnancy and lactation reduces the appetitive behavioral component in female offspring tested in a brief-access taste procedure

*Y. Treesukosol, B. Sun, A. A. Moghadam, N.-C. Liang, K. L. Tamashiro,
and T. H. Moran*

R499

CARDIOVASCULAR AND RENAL INTEGRATION

Biomarkers of vascular function in premenopausal and recent postmenopausal women of similar age: effect of exercise training

M. Nyberg, K. Seidelin, T. R. Andersen, N. N. Overby, Y. Hellsten, and J. Bangsbo

R510

April 15, 2014

CALL FOR PAPERS

Fetal and Neonatal Programming: Epigenetic Modification of Phenotype

Consuming a Western diet for two weeks suppresses fetal genes in mouse hearts

H. M. Medford, E. J. Cox, L. E. Miller, and S. A. Marsh

R519

Maternal and postweaning high-fat diets disturb hippocampal gene expression, learning, and memory function (*Translational Physiology*)

K. C. Page, E. K. Jones, and E. K. Anday

R527

RESEARCH

NEURAL CONTROL

ANG II modulates both slow and rapid baroreflex responses of barosensitive bulbospinal neurons in the rabbit rostral ventrolateral medulla

T. Saigusa and J. Arita

R538

Meth math: modeling temperature responses to methamphetamine

Y. I. Molkov, M. V. Zaretskaia, and D. V. Zaretsky

R552

Intracarotid hypertonic sodium chloride differentially modulates sympathetic nerve activity to the heart and kidney

R. Frithiof, T. Xing, M. J. McKinley, C. N. May, and R. Ramchandra

R567

FLUID AND ELECTROLYTE HOMEOSTASIS

Intracarotid hypertonic sodium chloride differentially modulates sympathetic nerve activity to the heart and kidney

R. Frithiof, T. Xing, M. J. McKinley, C. N. May, and R. Ramchandra

R567

Selective inhibition of angiotensin receptor signaling through Erk1/2 pathway by a novel peptide

J. Liu, G. L. C. Yosten, H. Ji, D. Zhang, W. Zheng, R. C. Speth, W. K. Samson, and K. Sandberg

R619

PHYSICAL ACTIVITY AND INACTIVITY

Skeletal myofiber VEGF is essential for the exercise training response in adult mice

H. Delavar, L. Nogueira, P. D. Wagner, M. C. Hogan, D. Metzger, and E. C. Breen

R586

Adipose tissue and vascular phenotypic modulation by voluntary physical activity and dietary restriction in obese insulin-resistant OLETF rats

J. M. Crissey, N. T. Jenkins, K. A. Lansford, P. K. Thorne, D. S. Bayless, V. J. Vieira-Potter, R. S. Rector, J. P. Thyfault, M. H. Laughlin, and J. Padilla

R596

OBESITY, DIABETES AND ENERGY HOMEOSTASIS

Meth math: modeling temperature responses to methamphetamine

Y. I. Molkov, M. V. Zaretskaia, and D. V. Zaretsky

R552

Systemic leptin dose-dependently increases STAT3 phosphorylation within hypothalamic and hindbrain nuclei

J. W. Maniscalco and L. Rinaman

R576

Adipose tissue and vascular phenotypic modulation by voluntary physical activity and dietary restriction in obese insulin-resistant OLETF rats

J. M. Crissey, N. T. Jenkins, K. A. Lansford, P. K. Thorne, D. S. Bayless, V. J. Vieira-Potter, R. S. Rector, J. P. Thyfault, M. H. Laughlin, and J. Padilla

R596

CARDIOVASCULAR AND RENAL INTEGRATION

ANG II modulates both slow and rapid baroreflex responses of barosensitive bulbospinal neurons in the rabbit rostral ventrolateral medulla

T. Saigusa and J. Arita

R538

RESPIRATION

Skeletal myofiber VEGF is essential for the exercise training response in adult mice

H. Delavar, L. Nogueira, P. D. Wagner, M. C. Hogan, D. Metzger, and E. C. Breen

R586

HORMONES, REPRODUCTION AND DEVELOPMENT

Systemic leptin dose-dependently increases STAT3 phosphorylation within hypothalamic and hindbrain nuclei

J. W. Maniscalco and L. Rinaman

R576

Embryo transfer cannot delineate between the maternal pregnancy environment and germ line effects in the transgenerational transmission of disease in rats

M. Tran, L. A. Gallo, A. N. Hanvey, A. J. Jefferies, K. T. Westcott,

L. A. Cullen-McEwen, D. K. Gardner, K. M. Moritz, and M. E. Wlodek

R607

American Journal of Physiology-Renal Physiology

April 1, 2014

REVIEWS

H-K-ATPase type 2: relevance for renal physiology and beyond

G. Crambert

F693

Regulation of nephron water and electrolyte transport by adenylyl cyclases

T. Rieg and D. E. Kohan

F701

CALL FOR PAPERS Renal solute cotransporters and exchangers

Functional consequences of NKCC2 splice isoforms: insights from a *Xenopus* oocyte model

L. Lu and J. A. Fraser

F710

EDITORIAL FOCUS

Two Rhesus protein ammonia transporters team up to eliminate ammonium into urine

C. A. Wagner and S. Bourgeois

F721

Promotion of cell proliferation by clusterin in the renal tissue repair phase after ischemia-reperfusion injury

C. Y. C. Nguan, Q. Guan, M. E. Gleave, and C. Du

F724

Inactivation of renal mitochondrial respiratory complexes and manganese superoxide dismutase during sepsis: mitochondria-targeted antioxidant mitigates injury

N. K. Patil, N. Parajuli, L. A. MacMillan-Crow, and P. R. Mayeux

F734

Downregulation of renal type IIa sodium-dependent phosphate cotransporter during lipopolysaccharide-induced acute inflammation

S. Ikeda, H. Yamamoto, M. Masuda, Y. Takei, O. Nakahashi, M. Kozai, S. Tanaka,

M. Nakao, Y. Taketani, H. Segawa, M. Iwano, K. Miyamoto, and E. Takeda

F744

Descending vasa recta endothelial cells and pericytes form mural syncytia

Z. Zhang, H. Lin, C. Cao, K. Payne, and T. L. Pallone

F751

Dicer function is required in the metanephric mesenchyme for early kidney development

J. Y. S. Chu, S. Sims-Lucas, D. S. Bushnell, A. J. Bodnar, J. A. Kreidberg, and J. Ho

F764

Angiotensin-converting enzyme 2 mediates hyperfiltration associated with diabetes

C. Tikellis, R. Brown, G. A. Head, M. E. Cooper, and M. C. Thomas

F773

Role of spinal GABA_A receptors in pudendal inhibition of nociceptive and nonnociceptive bladder reflexes in cats

Z. Xiao, J. Reese, Z. Schwen, B. Shen, J. Wang, J. R. Roppolo, W. C. de Groat,
and C. Tai

F781

REVIEWS

Loss of a kidney during fetal life: long-term consequences and lessons learned <i>Y. R. Lankadева, R. R. Singh, M. Tare, K. M. Moritz, and K. M. Denton</i>	F791
Role of Toll-like receptor-4 in renal graft ischemia-reperfusion injury <i>H. Zhao, J. S. Perez, K. Lu, A. J. T. George, and D. Ma</i>	F801
<hr/>	
Angiotensin 1–7 mediates renoprotection against diabetic nephropathy by reducing oxidative stress, inflammation, and lipotoxicity <i>J. Mori, V. B. Patel, T. Ramprasath, O. A. Alrob, J. DesAulniers, J. W. Scholey, G. D. Lopaschuk, and G. Y. Oudit</i>	F812
Galectin-9 ameliorates anti-GBM glomerulonephritis by inhibiting Th1 and Th17 immune responses in mice <i>Q. Zhang, H. Luan, L. Wang, F. He, H. Zhou, X. Xu, X. Li, Q. Xu, T. Niki, M. Hirashima, G. Xu, Y. Lv, and J. Yuan</i>	F822
Renal-specific and inducible depletion of NaPi-IIc/Slc34a3, the cotransporter mutated in HHRH, does not affect phosphate or calcium homeostasis in mice <i>K. Myakala, S. Motta, H. Murer, C. A. Wagner, R. Koesters, J. Biber, and N. Hernando</i>	F833
A distributed two-pore model: theoretical implications and practical application to the glomerular sieving of Ficoll <i>C. M. Öberg and B. Rippe</i>	F844
ANG-(3–4) inhibits renal Na ⁺ -ATPase in hypertensive rats through a mechanism that involves dissociation of ANG II receptors, heterodimers, and PKA <i>J. Dias, F. M. Ferrão, F. Axelband, A. K. Carmona, L. S. Lara, and A. Vieyra</i>	F855
Iodinated contrast media cause direct tubular cell damage, leading to oxidative stress, low nitric oxide, and impairment of tubuloglomerular feedback <i>Z. Z. Liu, K. Schmerbach, Y. Lu, A. Perlewitz, T. Nikitina, K. Cantow, E. Seeliger, P. B. Persson, A. Patzak, R. Liu, and M. M. Sendeski</i>	F864
Remote conditioning or erythropoietin before surgery primes kidneys to clear ischemia-reperfusion-damaged cells: a renoprotective mechanism? <i>D. S. Gardner, S. J. M. Welham, L. J. Dunford, T. A. McCulloch, Z. Hodis, P. Sleeman, S. O'Sullivan, and M. A. J. Devonald</i>	F873
Kidney injury molecule-1 expression in IgA nephropathy and its correlation with hypoxia and tubulointerstitial inflammation <i>Q. Lin, Y. Chen, J. Lv, H. Zhang, J. Tang, L. Gunaratnam, X. Li, and L. Yang</i>	F885
Albumin-bound fatty acids but not albumin itself alter redox balance in tubular epithelial cells and induce a peroxide-mediated redox-sensitive apoptosis <i>C. Ruggiero, C. M. Elks, C. Kruger, E. Cleland, K. Addison, R. C. Noland, and K. Stadler</i>	F896
Renal tubular Notch signaling triggers a prosenescence state after acute kidney injury <i>I. Sörensen-Zender, S. Rong, N. Susnik, S. Zender, P. Pennekamp, A. Melk, H. Haller, and R. Schmitt</i>	F907
ER stress triggers MCP-1 expression through SET7/9-induced histone methylation in the kidneys of db/db mice <i>J. Chen, Y. Guo, W. Zeng, L. Huang, Q. Pang, L. Nie, J. Mu, F. Yuan, and B. Feng</i>	F916

ANNOUNCEMENTS

2014 Robert W. Berliner Award for Excellence in Renal Physiology	F926
2014 Carl W. Gottschalk Distinguished Lecturer of the American Physiological Society Renal Section	F927
2014 Young Investigator Award of the American Physiological Society Renal Section	F928