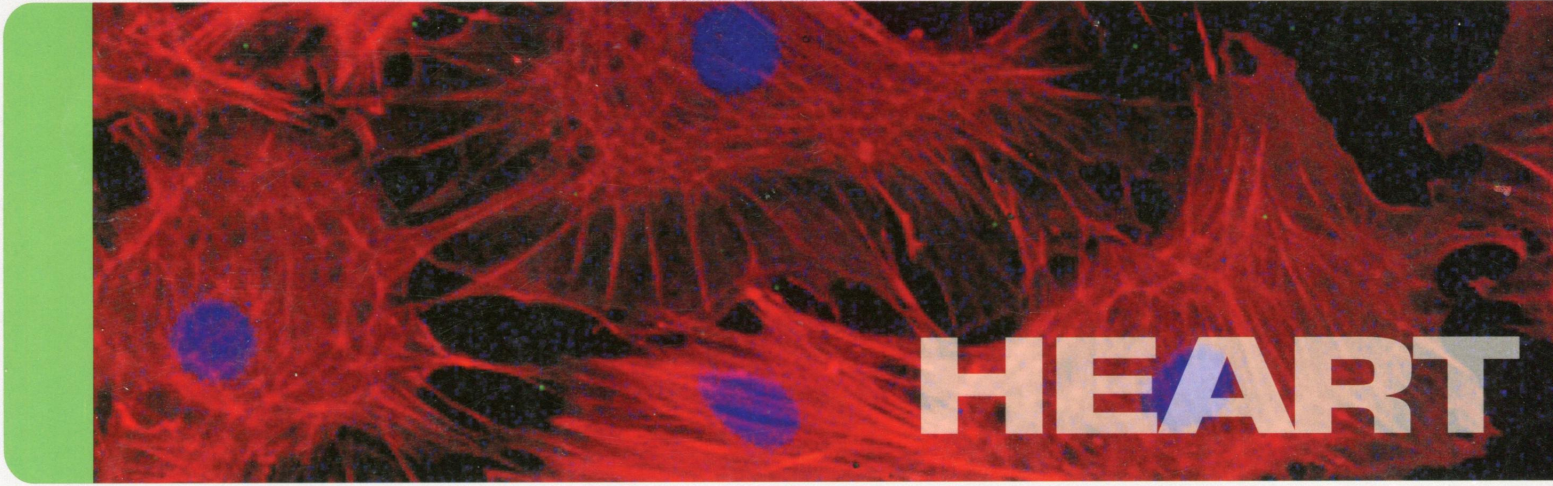


1111
A 47/jpt AN JOURNAL OF
PHYSIOLOGY

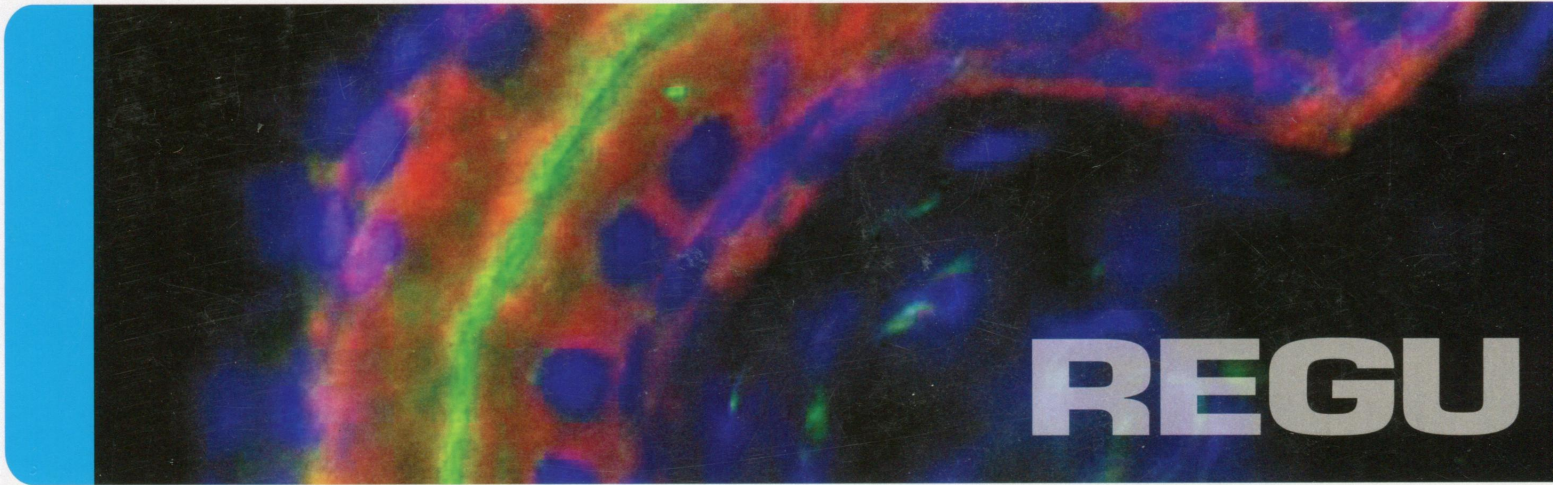
volume 306

no. 3

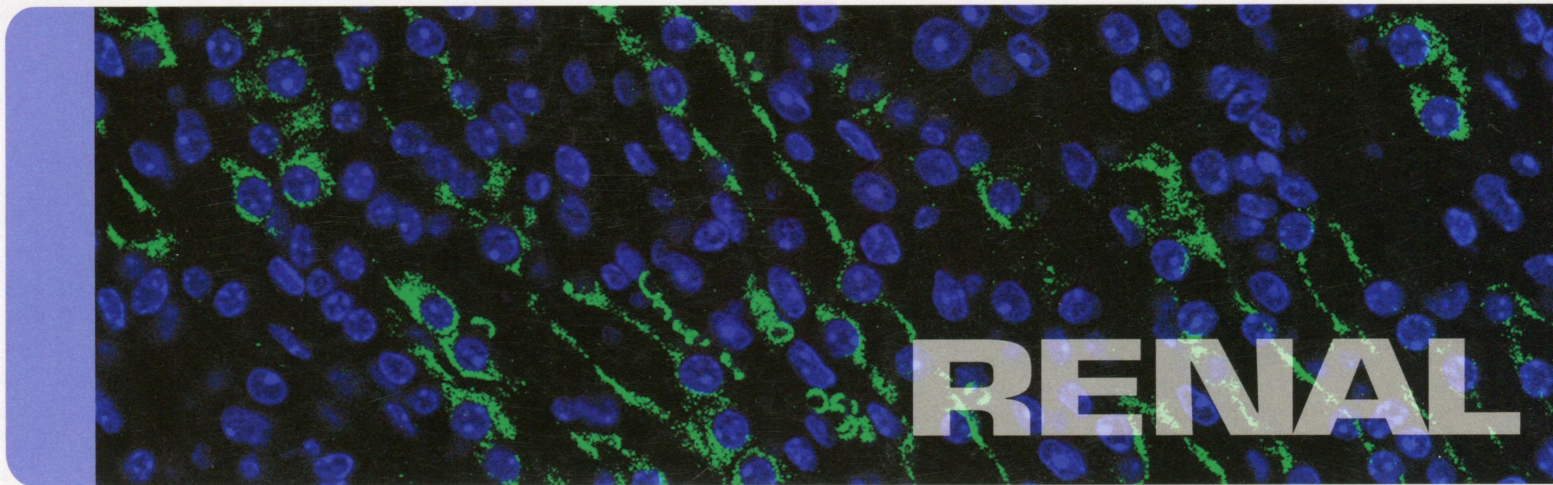
march 2014



HEART



REGU



RENAL

2 of 2

PUBLISHED BY THE AMERICAN PHYSIOLOGICAL SOCIETY

American Journal of Physiology- Heart and Circulatory Physiology

March 1, 2014

REVIEW

Mechanisms of cardiac conduction: a history of revisions

R. Veeraraghavan, R. G. Gourdie, and S. Poelzing

H619

CALL FOR PAPERS

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

Role of estrogen in diastolic dysfunction (Review)

Z. Zhao, H. Wang, J. A. Jessup, S. H. Lindsey, M. C. Chappell, and L. Groban

H628

CALL FOR PAPERS

Cardiovascular and Cerebrovascular Aging—New Mechanisms and Insights

Macrophage-derived IL-18 and increased fibrinogen deposition are age-related inflammatory signatures of vascular remodeling

L. Rodriguez-Menocal, M. H. Faridi, L. Martinez, L. A. Shehadeh, J. C. Duque, Y. Wei, A. Mesa, A. Pena, V. Gupta, S. M. Pham, and R. I. Vazquez-Padron

H641

VASCULAR BIOLOGY AND MICROCIRCULATION

- Altered reactivity of resistance vasculature contributes to hypertension in elastin insufficiency
P. Osei-Owusu, R. H. Knutsen, B. A. Kozel, H. H. Dietrich, K. J. Blumer, and R. P. Mecham H654
- Endothelin-1-induced vasoconstriction does not require intracellular Ca²⁺ waves in arteries from rats exposed to intermittent hypoxia
J. M. Osmond, L. V. Gonzalez Bosc, B. R. Walker, and N. L. Kanagy H667
- PKC activation increases Ca²⁺ sensitivity of permeabilized lymphatic muscle via myosin light chain 20 phosphorylation-dependent and -independent mechanisms
P. J. Dougherty, Z. V. Nepiyushchikh, S. Chakraborty, W. Wang, M. J. Davis, D. C. Zawieja, and M. Muthuchamy H674
- Inhibition of NADPH oxidase prevents acute lung injury in obese rats following severe trauma
L. Xiang, S. Lu, P. N. Mittwede, J. S. Clemmer, and R. L. Hester H684
- Skeletal muscle microvascular oxygenation dynamics in heart failure: exercise training and nitric oxide-mediated function
D. M. Hirai, S. W. Copp, C. T. Holdsworth, S. K. Ferguson, D. J. McCullough, B. J. Behnke, T. I. Musch, and D. C. Poole H690
- G protein-coupled receptors mediate coronary flow- and agonist-induced responses via lectin-oligosaccharide interactions
S. Perez-Aguilar, D. Torres-Tirado, G. Martell-Gallegos, J. Velarde-Salcedo, A. P. Barba-de la Rosa, M. Knabb, and R. Rubio H699
-

ENERGETICS AND METABOLISM

- Beneficial effects of acute inhibition of the oxidative pentose phosphate pathway in the failing heart
D. Vimercati, K. Qanud, G. Mitacchione, D. Sosnowska, Z. Ungvari, R. Sarnari, D. Mania, N. Patel, T. H. Hintze, S. A. Gupte, W. C. Stanley, and F. A. Recchia H709
-

MUSCLE MECHANICS AND VENTRICULAR FUNCTION

- Intraventricular vortex properties in nonischemic dilated cardiomyopathy
J. Bernejo, Y. Benito, M. Alhama, R. Yotti, P. Martínez-Legazpi, C. P. del Villar, E. Pérez-David, A. González-Mansilla, C. Santa-Marta, A. Barrio, F. Fernández-Avilés, and J. C. del Álamo H718
- Cardiac function of the naked mole-rat: ecophysiological responses to working underground
K. M. Grimes, A. Voorhees, Y. A. Chiao, H.-C. Han, M. L. Lindsey, and R. Buffenstein H730
-

CARDIAC EXCITATION AND CONTRACTION

- Sarcoplasmic reticulum Ca²⁺ release is both necessary and sufficient for SK channel activation in ventricular myocytes
D. Terentyev, J. A. Rochira, R. Terentyeva, K. Roder, G. Koren, and W. Li H738
- The absence of insulin signaling in the heart induces changes in potassium channel expression and ventricular repolarization
A. Lopez-Izquierdo, R. O. Pereira, A. R. Wende, B. B. Punske, E. D. Abel, and M. Tristani-Firouzi H747
-

INTEGRATIVE CARDIOVASCULAR PHYSIOLOGY AND PATHOPHYSIOLOGY

- Fine temporal structure of cardiorespiratory synchronization
S. Ahn, J. Solfest, and L. L. Rubchinsky H755
-

RAPID REPORTS

- MMP-2 is localized to the mitochondria-associated membrane of the heart
B. G. Hughes, X. Fan, W. J. Cho, and R. Schulz H764
- Exploring the vascular smooth muscle receptor landscape in vivo: ultrasound Doppler versus near-infrared spectroscopy assessments
S. J. Ives, P. J. Fadel, R. M. Brothers, M. Sander, and D. W. Wray H771
-

LETTERS TO THE EDITOR

- Letter to the editor: "Cyclosporin A in left ventricular remodeling after myocardial infarction"
S. Javadov H777

March 15, 2014

CALL FOR PAPERS

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

Why are sex and gender important to basic physiology and translational and individualized medicine? (Review)

V. M. Miller

H781

VASCULAR BIOLOGY AND MICROCIRCULATION

Vascular endothelial growth factor-C: its unrevealed role in fibrogenesis

T. Zhao, W. Zhao, W. Meng, C. Liu, Y. Chen, and Y. Sun

H789

Resveratrol promotes endothelial cell wound healing under laminar shear stress through an estrogen receptor- α -dependent pathway

A. Yurdagul, Jr., J. J. Kleinedler, M. C. McInnis, A. R. Khandelwal, A. L. Spence, A. W. Orr, and T. R. Dugas

H797

MUSCLE MECHANICS AND VENTRICULAR FUNCTION

Contractile dysfunction in a mouse model expressing a heterozygous *MYBPC3* mutation associated with hypertrophic cardiomyopathy

D. Barefield, M. Kumar, P. P. de Tombe, and S. Sadayappan

H807

Interaction between respiration and right versus left ventricular volumes at rest and during exercise: a real-time cardiac magnetic resonance study

G. Claessen, P. Claus, M. Delcroix, J. Bogaert, A. L. Gerche, and H. Heidbuchel

H816

SIGNALING AND STRESS RESPONSE

Postconditioning leads to an increase in protein S-nitrosylation

G. Tong, A. M. Aponte, M. J. Kohr, C. Steenbergen, E. Murphy, and J. Sun

H825

Cleavage of I κ B α by calpain induces myocardial NF- κ B activation, TNF- α expression, and cardiac dysfunction in septic mice

X. Li, R. Luo, R. Chen, L. Song, S. Zhang, W. Hua, and H. Chen

H833

Mechanisms in cardiac fibroblast growth: an obligate role for Skp2 and FOXO3a in ERK1/2 MAPK-dependent regulation of p27^{kip1}

S. Pramod and K. Shivakumar

H844

NFAT transcription factor regulation by urocortin II in cardiac myocytes and heart failure

S. Walther, S. Awad, V. A. Lonchyna, and L. A. Blatter

H856

INTEGRATIVE CARDIOVASCULAR PHYSIOLOGY AND PATHOPHYSIOLOGY

Ranolazine improves diastolic function in spontaneously hypertensive rats

S. Williams, M. Pourrier, D. McAfee, S. Lin, and D. Fedida

H867

Estrogen-provided cardiac protection following burn trauma is mediated through a reduction in mitochondria-derived DAMPs

X. Yao, J. G. Wigginton, D. L. Maass, L. Ma, D. Carlson, S. E. Wolf, J. P. Minei, and Q. S. Zang

H882

The relationship between longitudinal, lateral, and septal contribution to stroke volume in patients with pulmonary regurgitation and healthy volunteers

S. Stephensen, K. Steding-Ehrenborg, P. Munkhammar, E. Heiberg, H. Arheden, and M. Carlsson

H895

Sympathetic nerve activity and peripheral vasodilator capacity in young and older men

E. C. Hart, B. G. Wallin, J. N. Barnes, M. J. Joyner, and N. Charkoudian

H904

β -Adrenergic blockade enhances coronary vasoconstrictor response to forehead cooling

M. D. Muller, Z. Gao, H. M. Patel, M. J. Heffernan, U. A. Leuenberger, and L. I. Sinoway

H910

Phosphodiesterase-5 activity exerts a coronary vasoconstrictor influence in awake swine that is mediated in part via an increase in endothelin production

Z. Zhou, V. J. de Beer, S. B. Bender, A. H. Jan Danser, D. Merkus, M. H. Laughlin, and D. J. Duncker

H918

American Journal of Physiology- Regulatory, Integrative and Comparative Physiology

March 1, 2014

INNOVATIVE METHODOLOGY

Minimally invasive method for determining the effective lymphatic pumping pressure in rats using near-infrared imaging

T. S. Nelson, R. E. Akin, M. J. Weiler, T. Kassis, J. A. Kornuta, and J. B. Dixon

R281

RESEARCH

NEURAL CONTROL

Differential regulation of TRPC4 in the vasopressin magnocellular system by water deprivation and hepatic cirrhosis in the rat

T. P. Nedungadi and J. T. Cunningham

R304

Expression of mineralocorticoid and glucocorticoid receptors in preautonomic neurons of the rat paraventricular nucleus

J. Chen, C. E. Gomez-Sanchez, A. Penman, P. J. May, and E. Gomez-Sanchez

R328

Delineation of vagal emetic pathways: intragastric copper sulfate-induced emesis and viral tract tracing in musk shrews

C. C. Horn, K. Meyers, A. Lim, M. Dye, D. Pak, L. Rinaman, and B. J. Yates

R341

GLP-1 receptor signaling is not required for reduced body weight after RYGB in rodents

J. Ye, Z. Hao, M. B. Mumphrey, R. L. Townsend, L. M. Patterson, N. Stylopoulos,

H. Münzberg, C. D. Morrison, D. J. Drucker, and H.-R. Berthoud

R352

The subfornical organ: a novel site of action of cholecystokinin

A.-S. F. Ahmed, L. Dai, W. Ho, A. V. Ferguson, and K. A. Sharkey

R363

FLUID AND ELECTROLYTE HOMEOSTASIS

Stress-induced stimulation of choline transport in cultured choroid plexus epithelium exposed to low concentrations of cadmium

R. K. Young and A. R. A. Villalobos

R291

Differential regulation of TRPC4 in the vasopressin magnocellular system by water deprivation and hepatic cirrhosis in the rat

T. P. Nedungadi and J. T. Cunningham

R304

Na⁺/H⁺ and Na⁺/NH₄⁺ exchange activities of zebrafish NHE3b expressed in *Xenopus* oocytes

Y. Ito, A. Kato, T. Hirata, S. Hirose, and M. F. Romero

R315

OBESITY, DIABETES AND ENERGY HOMEOSTASIS

Delineation of vagal emetic pathways: intragastric copper sulfate-induced emesis and viral tract tracing in musk shrews

C. C. Horn, K. Meyers, A. Lim, M. Dye, D. Pak, L. Rinaman, and B. J. Yates

R341

GLP-1 receptor signaling is not required for reduced body weight after RYGB in rodents

J. Ye, Z. Hao, M. B. Mumphrey, R. L. Townsend, L. M. Patterson, N. Stylopoulos,

H. Münzberg, C. D. Morrison, D. J. Drucker, and H.-R. Berthoud

R352

The subfornical organ: a novel site of action of cholecystokinin

A. F. Ahmed, L. Dai, W. Ho, A. V. Ferguson, and K. A. Sharkey

R363

CARDIOVASCULAR AND RENAL INTEGRATION

Expression of mineralocorticoid and glucocorticoid receptors in preautonomic neurons of the rat paraventricular nucleus

J. Chen, C. E. Gomez-Sanchez, A. Penman, P. J. May, and E. Gomez-Sanchez

R328

March 15, 2014

CALL FOR PAPERS

Integrative Aspects of Energy Homeostasis and Metabolic Diseases

Central sympathetic innervations to visceral and subcutaneous white adipose tissue

N. L. T. Nguyen, J. Randall, B. W. Banfield, and T. J. Bartness

R375

RESEARCH

NEURAL CONTROL

- Phase-dependent resetting of the adrenal clock by ACTH in vitro
J. M. Yoder, M. Brandeland, and W. C. Engeland R387
- Brown adipose tissue thermogenesis contributes to emotional hyperthermia in a resident rat suddenly confronted with an intruder rat
M. Mohammed, Y. Ootsuka, and W. Blessing R394

OBESITY, DIABETES AND ENERGY HOMEOSTASIS

- Brown adipose tissue thermogenesis contributes to emotional hyperthermia in a resident rat suddenly confronted with an intruder rat
M. Mohammed, Y. Ootsuka, and W. Blessing R394
- Maternal food restriction modulates cerebrovascular structure and contractility in adult rat offspring: effects of metyrapone
L. M. Durrant, O. Khorram, J. N. Buchholz, and W. J. Pearce R401
- Nutrient-specific feeding and endocrine effects of jejunal infusions in obese animals
M. J. Dailey, A. A. Moghadam, and T. H. Moran R420

CARDIOVASCULAR AND RENAL INTEGRATION

- High-NaCl diet impairs dynamic renal blood flow autoregulation in rats with adenine-induced chronic renal failure
A. Saeed, G. F. DiBona, E. Grimberg, L. Nguy, M. L. N. Mikkelsen, N. Marcussen, and G. Guron R411
- Exposure to rosiglitazone, a PPAR- γ agonist, in late gestation reduces the abundance of factors regulating cardiac metabolism and cardiomyocyte size in the sheep fetus
S. Lie, M. Hui, I. C. McMillen, B. S. Muhlhauser, G. S. Posterino, S. L. Dunn, K. C. Wang, K. J. Botting, and J. L. Morrison R429

HORMONES, REPRODUCTION AND DEVELOPMENT

- Maternal food restriction modulates cerebrovascular structure and contractility in adult rat offspring: effects of metyrapone
L. M. Durrant, O. Khorram, J. N. Buchholz, and W. J. Pearce R401
- Exposure to rosiglitazone, a PPAR- γ agonist, in late gestation reduces the abundance of factors regulating cardiac metabolism and cardiomyocyte size in the sheep fetus
S. Lie, M. Hui, I. C. McMillen, B. S. Muhlhauser, G. S. Posterino, S. L. Dunn, K. C. Wang, K. J. Botting, and J. L. Morrison R429

American Journal of Physiology- Renal Physiology

March 1, 2014

EDITORIAL

- Chronic kidney disease and the aging population
M. Tonelli and M. Riella F469
-

REVIEW

- The physical basis of renal fibrosis: effects of altered hydrodynamic forces on kidney homeostasis
B. M. Grabias and K. Konstantopoulos F473
-

CALL FOR PAPERS Novel Therapeutics in Renal Diseases

- Tongxinluo ameliorates renal structure and function by regulating miR-21-induced epithelial-to-mesenchymal transition in diabetic nephropathy
J.-y. Wang, Y.-b. Gao, N. Zhang, D.-w. Zou, L.-p. Xu, Z.-y. Zhu, J.-y. Li, S.-n. Zhou, F.-q. Cui, X.-j. Zeng, J.-g. Geng, and J.-k. Yang F486

A PTBA small molecule enhances recovery and reduces postinjury fibrosis after aristolochic acid-induced kidney injury

T. Novitskaya, L. McDermott, K. X. Zhang, T. Chiba, P. Pauksakon, N. A. Hukriede, and M. P. de Caestecker

F496

EDITORIAL FOCI

Complex vascular bundles, thick ascending limbs, and aquaporins: wringing out the outer medulla

T. L. Pallone

F505

PC and PKC: in vivo vs. in vitro

A. Staruschenko and T. A. Safonova

F507

Angiotensin II stimulates basolateral 50-pS K channels in the thick ascending limb

M. Wang, H. Luan, P. Wu, L. Fan, L. Wang, X. Duan, D. Zhang, W.-H. Wang, and R. Gu

F509

Effect of chronic metabolic acidosis on bone density and bone architecture in vivo in rats

J. A. Gasser, H. N. Hulter, P. Imboden, and R. Krapf

F517

Hydrochlorothiazide attenuates lithium-induced nephrogenic diabetes insipidus independently of the sodium-chloride cotransporter

A. P. Sinke, M. L. A. Kortenoeven, T. de Groot, R. Baumgarten, O. Devuyt, J. F. M. Wezels, J. Loffing, and P. M. T. Deen

F525

COX2 inhibition during nephrogenic period induces ANG II hypertension and sex-dependent changes in renal function during aging

V. Reverte, A. Tapia, A. Loria, F. Salazar, M. T. Llinas, and F. J. Salazar

F534

Resveratrol induces acute endothelium-dependent renal vasodilation mediated through nitric oxide and reactive oxygen species scavenging

K. L. Gordish and W. H. Beierwaltes

F542

Basal renal O₂ consumption and the efficiency of O₂ utilization for Na⁺ reabsorption

R. G. Evans, G. K. Harrop, J. P. Ngo, C. P. C. Ow, and P. M. O'Connor

F551

Deletion of α -subunit exon 11 of the epithelial Na⁺ channel reveals a regulatory module

J. Chen, T. R. Kleyman, and S. Sheng

F561

CORRIGENDUM

Corrigendum for Behets GJ et al., Volume 306/75, January 2014, p. F61–F67

F568

March 15, 2014

REVIEW

HuR and other turnover- and translation-regulatory RNA-binding proteins: implications for the kidney

R. Pullmann Jr. and H. Rabb

F569

EDITORIAL FOCUS

Zeroing in on the albumin glomerular sieving coefficient

B. Haraldsson and G. A. Tanner

F577

Measurement of renal tissue oxygenation with blood oxygen level-dependent MRI and oxygen transit modeling

J. L. Zhang, G. Morrell, H. Rusinek, L. Warner, P.-H. Vivier, A. K. Cheung, L. O. Lerman, and V. S. Lee

F579

Regulation of reninase expression by D₅ dopamine receptors in rat renal proximal tubule cells

S. Wang, X. Lu, J. Yang, H. Wang, C. Chen, Y. Han, H. Ren, S. Zheng, D. He, L. Zhou, L. D. Asico, W. E. Wang, P. A. Jose, and C. Zeng

F588

Lack of an effect of collecting duct-specific deletion of adenylyl cyclase 3 on renal Na⁺ and water excretion or arterial pressure

W. Kittikulsuth, D. Stuart, A. N. Van Hoek, J. D. Stockand, V. Bugaj, E. Mironova, M. A. Blount, and D. E. Kohan

F597

- ROCK/NF- κ B axis-dependent augmentation of angiotensinogen by angiotensin II in primary-cultured preglomerular vascular smooth muscle cells
K. Miyata, R. Satou, W. Shao, M. C. Prieto, M. Urushihara, H. Kobori, and L. G. Navar F608
- Clopidogrel preserves whole kidney autoregulatory behavior in ANG II-induced hypertension
D. A. Osmond, S. Zhang, J. S. Pollock, T. Yamamoto, C. De Miguel, and E. W. Inscho F619
- Insulin treatment attenuates renal ADAM17 and ACE2 shedding in diabetic Akita mice
E. S. B. Salem, N. Grobe, and K. M. Elased F629
- Aberrant expression of laminin-332 promotes cell proliferation and cyst growth in ARPKD
S. Vijayakumar, S. Dang, M. P. Marinkovich, Z. Lazarova, B. Yoder, V. E. Torres, and D. P. Wallace F640
- Renoprotective effect of renal liver-type fatty acid binding protein and angiotensin II type 1a receptor loss in renal injury caused by RAS activation
D. Ichikawa, A. Kamijo-Ikemori, T. Sugaya, Y. Shibagaki, T. Yasuda, K. Katayama, S. Hoshino, J. Igarashi-Migitaka, K. Hirata, and K. Kimura F655
- Three-dimensional reconstruction of the rat nephron
E. I. Christensen, B. Grann, I. B. Kristoffersen, E. Skriver, J. S. Thomsen, and A. Andreassen F664
- NBCe1A dimer assemble visualized by bimolecular fluorescence complementation
M.-H. Chang, A.-P. Chen, and M. F. Romero F672
- Increased progression to kidney fibrosis after erythropoietin is used as a treatment for acute kidney injury
G. C. Gobe, N. C. Bennett, M. West, P. Colditz, L. Brown, D. A. Vesey, and D. W. Johnson F681