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Ingestion of glucose or sucrose prevents liver but not muscle glycogen depletion during prolonged endurance-type exercise in trained cyclists
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Hepatocyte X-box binding protein 1 deficiency increases liver injury in mice fed a high-fat/sugar diet
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Inflammation, Immunity, and Infection

Matrix metalloproteinase 9-induced increase in intestinal epithelial tight junction permeability contributes to the severity of experimental DSS colitis
Prashant Nighot, Rana Al-Sadi, Manmeet Rawat, Shuhong Guo, D. Martin Watterson, Thomas Ma
December 15, 2015: G988-G997
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Plasma levels of microRNA in chronic kidney disease: patterns in acute and chronic exercise
DOI: 10.1152/ajpheart.00346.2015
This study offers novel insights into the role of circulating microRNA in exercise-induced adaptations in chronic kidney disease, which can eventually lead to the identification of targets for effective preventive strategies.

Cardiac and mitochondrial dysfunction following acute pulmonary exposure to mountaintop removal mining particulate matter
December 15, 2015 : H2017-H2030
DOI: 10.1152/ajpheart.00353.2015
We describe for the first time cardiac and mitochondrial dysfunction following an acute pulmonary exposure to a unique particulate matter, which arises from the process of mountaintop removal, common in surface mining operations. Our findings suggest enhanced cardiac risk for populations living in close proximity to mountaintop mining operations.

Unitary TRPV3 channel Ca2+ influx events elicit endothelium-dependent dilation of cerebral parenchymal arterioles
Paulo W. Pires, Michelle N. Sullivan, Harry A. T. Pritchard, Jennifer J. Robinson, Scott Earley
December 15, 2015 : H2031-H2041
DOI: 10.1152/ajpheart.00140.2015
The dietary compound carvacrol activates high-amplitude TRPV3 sparklets in endothelial cells from cerebral pial arteries and parenchymal arterioles. This is the first study to characterize TRPV3 sparklets. This is the first report to show that activation of a TRP channel causes endothelium-dependent dilation of cerebral parenchymal arterioles.

Lipopolysaccharide modulates neutrophil recruitment and macrophage polarization on lymphatic vessels and impairs lymphatic function in rat mesentery
Sanjukta Chakraborty, Scott D. Zawieja, Wei Wang, Yang Lee, Yuan J. Wang, Pierre-Yves von der Weid, David C. Zawieja, Mariappan Muthuchamy
December 15, 2015 : H2042-H2057
DOI: 10.1152/ajpheart.00467.2015
LPS causes a conducive environment in the mesentery that decreases the neutrophils and shifts the balance toward a M2 macrophage polarization on and/or near the vicinity of lymphatics. LPS-TLR4-mediated regulation of NF-kB, pAKT, pERK, and pMLC20 in lymphatic muscle cells promotes inflammation and significant impairment in mesenteric lymphatic function.

An intact small animal model of myocardial ischemia-reperfusion: Characterization of metabolic changes by hyperpolarized 13C MR spectroscopy
Hikari A. I. Yoshihara, Jessica A. M. Bastiaansen, Corinne Berthonneche, Arnaud Comment, Juerg Schwitter
December 15, 2015 : H2058-H2066
DOI: 10.1152/ajpheart.00376.2015
For the first time in an intact rat model, hyperpolarized 13C spectroscopy is used to follow changes in myocardial energy metabolism in ischemia-reperfusion. This model can explore ischemia-reperfusion metabolism with preserved neuro-endocrine and inflammatory responses, and in translational research it can test novel treatment strategies in acute reperfused myocardial infarction.

The relationship between biventricular myocardial performance and metabolic parameters during incremental exercise and recovery in healthy
This study is the first to simultaneously and directly investigate myocardial performance and metabolic exercise response by using state-of-the-art echocardiographic techniques (2-D speckle tracking) in healthy adolescents. It uncovers several relationships between cardiac and overall exercise performance that can enhance the role of exercise testing in cardiac disease.

The Frank-Starling mechanism involves deceleration of cross-bridge kinetics and is preserved in failing human right ventricular myocardium.

Using a novel method that allows assessment of cross-bridge cycling at body temperature in intact muscles obtained from end-stage failing as well as nonfailing human hearts, we show cross-bridge cycling rate to be length dependent in the right ventricle but not to be altered by disease.

Cardiovascular Neurohormonal Regulation

Sympathetic activation is associated with increased IL-6, but not CRP in the absence of obesity: lessons from postural tachycardia syndrome and obesity.

Sympathetic activation and parasympathetic withdrawal in POTS patients were associated with increased serum IL-6 independently of obesity in POTS. Lean POTS patients had normal plasma hsCRP despite high IL-6, suggesting that the coupling between IL-6 and CRP requires increased adiposity. Circulating inflammatory markers were similar in POTS patients with and without chronic fatigue syndrome.

Cardiac Excitation and Contraction

Effect of autonomic blocking agents on the respiratory-related oscillations of ventricular action potential duration in humans.

Ventricular action potential repolarization is critical to electrical stability and arrhythmogenesis. Oscillations at the respiratory frequency were investigated in humans by combining endocardial electrophysiological recordings, controlled respiration with adrenergic blocking agents. Results are consistent with a partial role of the sympathetic nervous system combined with additional mechanisms, possibly involving mechano-electric feedback.

We present a novel analysis technique to quantify the synchrony between regions of tissue during human atrial fibrillation (AF). The analysis reveals localized pockets of synchrony during AF, arguing against multiwavelet reentry and suggesting that instead AF involves spatially contiguous regions of coherence surrounded by disorganized activation.
Integrative Cardiovascular Physiology and Pathophysiology

The coiled-coil domain of MURC/cavin-4 is involved in membrane trafficking of caveolin-3 in cardiomyocytes
Daisuke Naito, Takehiro Ogata, Tetsuro Hamaoka, Naohiko Nakanishi, Kotaro Miyagawa, Naoki Maruyama, Takeru Kasahara, Takuya Taniguchi, Masahiro Nishi, Satoaki Matoba, Tomomi Ueyama
December 15, 2015 : H2127-H2136
DOI: 10.1152/ajpheart.00446.2015

Muscle-restricted coiled-coil protein (MURC)/cavin-4 requires its coiled-coil domain to target the plasma membrane. Deletion of the coiled-coil domain in MURC/cavin-4 (ΔCC) impairs membrane localization of caveolin-3 and induces cardiomyocyte hypertrophy. Transgenic mice expressing ΔCC in the heart show impaired cardiac function. Thus, MURC/cavin-4 functions as a crucial caveolar component to regulate cardiac function.

At high cardiac output, diesel exhaust exposure increases pulmonary vascular resistance and decreases distensibility of pulmonary resistive vessels
Aurélien Wauters, Marco Vicenzi, Benjamin De Becker, Jean-Philippe Riga, Fatemeh Esmaeilzadeh, Vitalie Faoro, Jean-Luc Vachiéry, Philippe van de Borne, Jean-François Argacha
December 15, 2015 : H2137-H2144
DOI: 10.1152/ajpheart.00149.2015

This study demonstrates, for the first time in human subjects exposed to diesel exhaust, a pulmonary vasomotor tone impairment. A 2-h exposure to diesel exhaust alters pulmonary vessel distensibility at high cardiac output and increases pulmonary vascular resistance.

Muscle metaboreflex activation during dynamic exercise vasoconstricts ischemic active skeletal muscle
December 15, 2015 : H2145-H2151
DOI: 10.1152/ajpheart.00679.2015

We found that the muscle metaboreflex elicits vasoconstriction within the same ischemic active skeletal muscle from which the reflex originates, thereby creating a limiting positive feedback, which essentially amplifies the reflex responses. This vasoconstriction could limit the ability of the reflex to restore flow to ischemic muscle.

Circadian variation of variability and irregularity of heart rate in patients with permanent atrial fibrillation: relation to symptoms and rate control drugs
Valentina D. A. Corino, Pyotr G. Platonov, Steve Enger, Arnjot Tveit, Sara R. Ulimoen
December 15, 2015 : H2152-H2157
DOI: 10.1152/ajpheart.00300.2015

Patients with permanent atrial fibrillation showed a circadian variation in heart rate and ventricular response variability parameters in most patients. In contrast, few patients showed circadian variations in irregularity parameters, and these were more symptomatic than other patients. β-Blockers and Ca2+ channel blockers influenced irregularity parameters differently.

Letters to the Editor

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KATP Channels in the Cardiovascular System
Monique N. Foster, William A. Coetzee
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DOI: 10.1152/physrev.00002.2015

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Warm-ups are used before sport to improve performance, but sometimes there are enforced cool-down periods which could offset the benefits of a warm-up. This study showed that a soccer specific warm-up elevates muscle temperature and concomitant measures of voluntary and electrically evoked contractile power. Use of passive heating during a cool down period did not effect any measures performed here, but values after cool-down were still elevated from pre warm-up.

**TNF causes changes in glomerular endothelial permeability and morphology through a Rho and myosin light chain kinase-dependent mechanism**

Chang Xu, Xiaoyan Wu, Bradley K. Hack, Lihua Bao, Patrick N. Cunningham

December 3, 2015 : e12636

DOI: 10.14814/phy2.12636

TNF is a key mediator of sepsis, and causes increased macromolecular permeability of renal endothelial cells. Here, we show that this TNF-induced permeability increase is dependent upon the Rho/MLCK pathway, associated with changes to the actin cytoskeleton. Through Rho and MLCK, TNF causes separation between adjacent endothelial cells, degradation of their glycocalyx, and a possible increase in glomerular fenestrae.

**Epoetin beta pegol alleviates oxidative stress and exacerbation of renal damage from iron deposition, thereby delaying CKD progression in progressive glomerulonephritis rats**

Michinori Hirata, Yoshihitto Tashiro, Ken Aizawa, Ryohei Kawasaki, Yasushi Shimonaka, Koichi Endo

December 3, 2015 : e12637

DOI: 10.14814/phy2.12637

This study indicates that a single dose of epoetin beta pegol (CERA) mitigates exacerbation of kidney damage, thereby delaying CKD progression in a glomerulonephritis rat model. CERA treatment suppressed oxidative stress, which would be involved in help regeneration of tubular cells. In addition, the alleviation by CERA of the exacerbation of kidney damage could be attributable to mitigation of tubular damage as a result of lowered iron deposition in the tubules.

**Glicentin-related pancreatic polypeptide inhibits glucose-stimulated insulin secretion from the isolated pancreas of adult male rats**

Lynda Whiting, Kevin W. Stewart, Deborah L. Hay, Paul W. Harris, Yee S. Choong, Anthony R. J. Phillips, Margaret A. Brimble, Garth J. S. Cooper

December 3, 2015 : e12638

DOI: 10.14814/phy2.12638

Peptides derived from the glucagon gene Gcg, for example glucagon and glucagon-like peptide 1 (GLP-1), act as physiological regulators of fuel metabolism and are thus of major interest in the pathogenesis of diseases such as type-2 diabetes and obesity. Glicentin-related pancreatic polypeptide (GRPP) is another 30 amino-acid Gcg-derived peptide identified in human, mouse, rat and pig, whose potential glucoregulatory function is largely unknown. We synthesized rat GRPP (rGRPP) and a closely related peptide, rat GRPP-like peptide (rGRPP-LP), investigated their actions in the liver and pancreas of adult male rats and suggest that GRPP and GRPP-LP may be novel regulators of insulin secretion, acting through an as-yet undefined receptor.

**Contributions of cardiac “funny” (f) channels and sarcoplasmic reticulum Ca2+ in regulating beating rate of mouse and guinea pig sinoatrial node**

Islom B. Nazarov, Christopher J. Schofield, Derek A. Terrar

December 10, 2015 : e12561

DOI: 10.14814/phy2.12561

The aim of this study was to investigate the effects on spontaneous beating rate of mouse atrial preparations following selective block of cardiac “funny” (f) channels, I(f), and/or suppression of sarcoplasmic reticulum (SR) function in the absence and presence of β-adrenoceptor stimulation. The observations are consistent with a role for Ca2+ released from the SR in regulating I(f) and therefore beating rate of SA node preparations; there appear to be additional contributions of SR-derived Ca2+ to effects of β-adrenoceptor stimulation on beating rate that are independent of I(f).

**Heterozygous eNOS deficiency is associated with oxidative stress and endothelial dysfunction in diet-induced obesity**

M. Irfan Ali, Xunsheng Chen, Sean P. Didion

December 10, 2015 : e12630

DOI: 10.14814/phy2.12630

The goals of this study were to determine mechanism(s) which serve to maintain normal endothelial function and those that promote endothelial dysfunction, such as that produced by a high fat diet, in heterozygous eNOS-deficient (eNOS+/−) mice. Our findings reveal that increased Ser1176-phosphorylation serves to promote normal endothelial responses in the absence of a single eNOS gene. In addition, heterozygous eNOS deficiency predisposes blood vessels to developing endothelial dysfunction in response to a HFD. The impairment of endothelial function produced by a HFD in eNOS+/− mice appears to be mediated, in large part, by IL-6-induced increases in vascular superoxide.

**Mouse ECG findings in aging, with conduction system affecting drugs and in cardiac pathologies: Development and validation of ECG analysis algorithm in mice**


December 10, 2015 : e12639
A new ECG analysis algorithm for analyzing mouse ECG was developed and found to be an accurate and feasible method. The ECG findings associated with aging, AMI and progressive LVH correlated well with the echocardiography findings and were found to resemble the ECG findings seen in humans.

Increased susceptibility to bladder inflammation in smokers: targeting the PAF–PAF receptor interaction to manage inflammatory cell recruitment
John Marentette, Grant Kolar, Jane McHowat
December 10, 2015 : e12641

Inflammation in the bladder wall in response to 4 weeks of smoking (Panel B) is attenuated in the absence of iPLA2beta knockout mice (Panel D).

Intermittent neonatal hypoxia elicits the upregulation of inflammatory-related genes in adult male rats through long-lasting programming effects
Ashley L. Gehrand, Mary L. Kaldunski, Eric D. Bruder, Shuang Jia, Martin J. Hessner, Hershel Raff
December 10, 2015 : e12646

We hypothesized that neonatal rat exposure to IH will subsequently result in a heightened inflammatory state in the adult. The analysis of plasma from adult rats previously exposed to neonatal 5% IH versus 10% IH resulted in 2579 significantly regulated genes including increased expression of Cxcl1, Cxcl2, Ccl3, Il1a, and Il1b. We conclude that neonatal exposure to intermittent hypoxia elicits a long-lasting programming effect in the adult resulting in an upregulation of inflammatory-related genes.

Changes in cerebral vascular reactivity and structure following prolonged exposure to high altitude in humans
December 10, 2015 : e12647

We investigated the impact of high altitude exposure on regional cerebral vascular function and cerebral tissue volumes following return to the normoxic environment. High altitude exposure led to improvements in regional cerebral reactivity depending upon the regional reactivity at baseline. In addition, grey matter volume was selectively reduced in otherwise healthy individuals.

Muscle damage and inflammation after eccentric exercise: can the repeated bout effect be removed?
Nikos V. Margaretilis, Anastasios A. Theodorou, Vasilios Baltzopoulos, Constantinos N. Maganaris, Vassilis Paschalis, Antonios Kyparos, Michalis G. Nikolaidis
December 10, 2015 : e12648

The alternating eccentric-concentric exercise scheme implemented in the present study, questioned the “dogma” of repeated bout effect by almost completely removing this adaptive phenomenon and perpetuating repeated episodes of muscle damage and inflammation. This novel paradigm has successfully overcame the repeated bout effect, making experimentally feasible to investigate the potential role of exercise-induced muscle micro-damage as a stimulus for physiological and biochemical adaptations.

17(R)-resolvin D1 ameliorates bleomycin-induced pulmonary fibrosis in mice
Masakiyo Yatomi, Takeshi Hisada, Tamotsu Ishizuka, Yasuhiro Koga, Akihiro Ono, Yosuke Kamide, Kaori Seki, Haruka Aoki-Saito, Hiroaki Tsurumaki, Noriaki Sunaga, Kyoichi Kaira, Kunio Dobashi, Masanobu Yamada, Fumikazu Okajima
December 10, 2015 : e12628

Administration of 17(R)-RvD1 from the start of BLM treatment attenuated neutrophil alveolar infiltration, lung collagen content, and Interleukin-1β (IL-1β), transforming growth factor-β1 (TGF-β1), connective tissue growth factor (CTGF) and type I collagen mRNA expression, along with subsequent reduction in histologically detectable fibrosis. The administration of 17(R)-RvD1 at the later fibrotic stage also improved the lung failure. These results suggest that 17(R)-RvD1 attenuates pulmonary fibrosis by promoting the resolution of neutrophilic inflammation and also provides pulmonary restoration.

Blunted hypothalamic ghrelin signaling reduces diet intake in rats fed a low-protein diet in late pregnancy
Haijun Gao, Stephanie Sisley, Chandra Yallampalli
December 10, 2015 : e12629

Diet intake in response to intracerebroventricular injection of ghrelin was lower in pregnant rats fed a low protein diet compared to those fed control
Meanwhile, phosphorylation of AMPK and ACC in the hypothalamus was also lower. These suggest that blunted ghrelin signaling in the hypothalamus of pregnant rats fed a LP diet leads to reduced diet intake.

**Motor planning poststroke: impairment in vector-coded reach plans**
John-Ross Rizzo, Todd E. Hudson, Andrew Abdou, Ira G. Rashbaum, Ajay E. George, Preethi Raghavan, Michael S. Landy
December 10, 2015 : e12650

DOI: 10.14814/phy2.12650

Participants with stroke and normal control participants made a series of center-out reaches on a tabletop. Here, average reach trajectories show that reaches with the more affected limb in stroke are hypermetric.

**Hypoxia reduces placental mTOR activation in a hypoxia-induced model of intrauterine growth restriction (IUGR)**
Rebecca Kimball, Montana Wayment, Daniel Merrill, Tyler Wahlquist, Paul R. Reynolds, Juan A. Arroyo
December 10, 2015 : e12651

DOI: 10.14814/phy2.12651

Decreased placental mTOR is observed during hypoxia treatment leading to the development of IUGR.

**Cigarette smoke represses the innate immune response to asbestos**
Gilbert F. Morris, Svitlana Danchuk, Yu Wang, Beibei Xu, Roy J. Rando, Arnold R. Brody, Bin Shan, Deborah E. Sullivan
December 10, 2015 : e12652

DOI: 10.14814/phy2.12652

Subchronic exposure to cigarette smoke represses activation of the innate immune response to inhaled asbestos in a mouse model. The finding that cigarette smoke represses the innate immune response to asbestos adds to a growing body of literature that cigarette smoke impairs immune surveillance in the lung.

**Influence of type 1 diabetes on basal and agonist-induced permeability of the blood–brain barrier**
William G. Mayhan, Jasmine P. Scott, Denise M. Arrick
December 10, 2015 : e12653

DOI: 10.14814/phy2.12653

The purpose of our study was to examine whether T1D altered basal and agonist-induced changes in permeability of the blood–brain barrier. We found that basal permeability was increased and agonist-induced changes in permeability were decreased in diabetic rats. We also found that agonist-induced changes in diameter of cerebral arterioles were impaired by T1D. We suggest that T1D impairs two critical aspects of endothelial cell function, i.e., reactivity and permeability.

**Induction of controlled hypoxic pregnancy in large mammalian species**
Kirsty L. Brain, Beth J. Allison, Youguo Niu, Christine M. Cross, Nozomi Itani, Andrew D. Kane, Emilio A. Herrera, Dino A. Giussani
December 10, 2015 : e12614

DOI: 10.14814/phy2.12614

We introduce a technique for physiological research able to maintain chronically instrumented maternal and fetal sheep for prolonged periods of gestation under significant and controlled isolated chronic hypoxia beyond levels that can be achieved by habitable high altitude. This model of chronic hypoxia permits measurement of materno-fetal blood gases as the challenge is actually occurring. Chronic hypoxia of this magnitude and duration using this model recapitulates the significant asymmetric growth restriction, the pronounced cardiomyopathy, and the loss of endothelial function measured in offspring of high-risk pregnancy in humans, opening a new window of therapeutic research.

**Exercise-conditioned plasma attenuates nuclear concentrations of DNA methyltransferase 3B in human peripheral blood mononuclear cells**
Steven Horsburgh, Stephen Todryk, Christopher Toms, Colin N. Moran, Les Ansley
December 10, 2015 : e12621

DOI: 10.14814/phy2.12621

The study sought to elucidate the underlying mechanisms by which exercise-induced epigenetic modifications occur. Data show that DNMT3B, but not DNMT3A, is attenuated when PBMCs were cultured in the presence of exercise-conditioned plasma. IL-6 may be one of many plasma proteins involved in this complex process.

**Vancomycin treatment and butyrate supplementation modulate gut microbe composition and severity of neointimal hyperplasia after arterial injury**
Karen J. Ho, Liqun Xiong, Nathaniel J. Hubert, Anuradha Nadimpalli, Kelly Wun, Eugene B. Chang, Melina R. Kibbe
December 10, 2015 : e12627

DOI: 10.14814/phy2.12627
This report demonstrates that antibiotic modulation of gut microbial composition alters production of a microbe-derived metabolite, sodium butyrate, which then regulates the arterial remodeling response after balloon angioplasty in rats. One potential mechanism is inhibition of vascular smooth muscle cell proliferation, migration, and cell cycle progression by butyrate.

**Routine daily physical activity and glucose variations are strongly coupled in adults with T1DM**
Sarah S. Farabi, David W. Carley, Ali Cinar, Lauretta Quinn
December 10, 2015 : e12644
DOI: 10.14814/phy2.12644

The relationship between routine daily physical activity and glucose variations has not been systematically investigated in adults with T1DM. The objectives of this study were to characterize and quantify the relationship between routine daily activity and glucose variations in a small group of adults with T1DM. We show that physical activity and glucose demonstrate strong time and frequency-dependent coupling throughout a 24-h time period in adults with T1DM.

**Impact of UGT2B17 gene deletion on the steroid profile of an athlete**
Pilar Martín-Escudero, Jesús Muñoz-Guerra, Nayade Del Prado, Mercedes Galindo Canales, Manuel Fuentes Ferrer, Soledad Vargas, Ana B. Soldevilla, Ester Serrano-Garde, Francisco Miguel-Tobal, Marisa Maestro de las Casas, Cristina Fernandez-Pérez
December 14, 2015 : e12645
DOI: 10.14814/phy2.12645

This article is significant in the area of science, as it is the first study with Spanish athletes.

This study includes a genetic study of each athlete in relation to UGT2B17 gene and its influence on the testosterone/epitestosterone ratio.

WADA needs to consider the influence of the human race in the steroid profile.

**Mechanisms for greater insulin-stimulated glucose uptake in normal and insulin-resistant skeletal muscle after acute exercise**
Gregory D. Cartee
December 15, 2015 : E949-E959
DOI: 10.1152/ajpendo.00416.2015

**Early-life stress origins of gastrointestinal disease: animal models, intestinal pathophysiology, and translational implications**
Calvin S. Pohl, Julia E. Medland, Adam J. Moeser
December 15, 2015 : G927-G941
DOI: 10.1152/ajpgi.00206.2015

**Candidate genes for hypertension: insights from the Dahl S rat**
Nathan P. Rudemiller, David L. Mattson
December 15, 2015 : F993-F995
DOI: 10.1152/ajprenal.00092.2015

**Sex and Gender Impact Immune Responses to Vaccines Among the Elderly**
Ashley L. Fink, Sabra L. Klein
November 2, 2015 : 408-416
DOI: 10.1152/physiol.00035.2015

**Skeletal Muscle Microvasculature: A Highly Dynamic Lifeline**
Claire Latroche, Cyril Gitiaux, Fabrice Chrétien, Isabelle Desguerre, Rémi Mounier, Bénédicte Chazaud
November 2, 2015 : 417-427
DOI: 10.1152/physiol.00026.2015

**Integration of ChREBP-Mediated Glucose Sensing into Whole Body Metabolism**
Floriane Baraille, Julien Planchais, Renaud Dentin, Sandra Guilmeau, Catherine Postic
November 2, 2015 : 428-437
DOI: 10.1152/physiol.00016.2015

**Plasma Membrane Repair: A Central Process for Maintaining Cellular Homeostasis**
Alisa D. Blazek, Brian J. Paleo, Noah Weisleder
ASICS Mediate Pain and Inflammation in Musculoskeletal Diseases
Ramy E. Abdelhamid, Kathleen A. Sluka
November 2, 2015 : 449-459
DOI: 10.1152/physiol.00030.2015

Cardiovascular Tissue Engineering: Preclinical Validation to Bedside Application
Cameron Best, Ekene Onwuka, Victoria Pepper, Malik Sams, Jake Breuer, Christopher Breuer
December 11, 2015 : 7-15
DOI: 10.1152/physiol.00018.2015

Exosomal miRNAs in Heart Disease
Claudio Iaconetti, Sabato Sorrentino, Salvatore De Rosa, Ciro Indolfi
December 11, 2015 : 16-24
DOI: 10.1152/physiol.00029.2015

Novel Functions of Renin Precursors in Homeostasis and Disease
R. Ariel Gomez, Maria Luisa S. Sequeira-Lopez
December 11, 2015 : 25-33
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* Does not include *Physiological Reviews*