

Publication List: Total Protein Normalization in Western Blotting Using Stain-Free Technology



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Bulletin 6351



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Methodology

Western blotting inaccuracies with unverified antibodies: Need for a western blotting minimal reporting standard (WBMRS).

Gilda JE, Ghosh R, Cheah JX, West TM, Bodine SC, Gomes AV (2015). PLoS One 10, e0135392.



Western blotting using in-gel protein labeling as a normalization control: Stain-free technology.

Gilda JE, Gomes AV (2015). Methods Mol Biol 1295, 381–391.



Tissue standards using stain free gels as a superior approach for aging research.

Wen HM, Dankle GM, Glenn KA (2015). Int J Biochem Res Rev 5, 73–81.



The necessity of and strategies for improving confidence in the accuracy of western blots.

Ghosh R, Gilda JE, Gomes AV (2014). Expert Rev Proteomics 11, 549–560.



Stain-free detection as loading control alternative to Ponceau and housekeeping protein immunodetection in western blotting.

Rivero-Gutiérrez B, Anzola A, Martinez-Augustin O, de Medina FS (2014). Anal Biochem 467, 1–3.



The design of a quantitative western blot experiment.

Taylor SC, Posch A (2014). Biomed Res Int 2014, article ID 361590.



Stain-free total protein staining is a superior loading control to β -actin for western blots.

Gilda JE, Gomes AV (2013). Anal Biochem 440, 186–188.



Stain-free technology as normalization tool in western blot analysis.

Gürtler A, Kunz N, Gomolka M, Hornhardt S, Friedl AA, McDonald K, Kohn JE, Posch A (2013). Anal Biochem 433, 105–111.



An old method facing a new challenge: Re-visiting housekeeping proteins as internal reference control for neuroscience research.

Li R, Shen Y (2013). Life Sci 92, 747–751.



Important considerations for protein analyses using antibody based techniques: Down-sizing western blotting up-sizes outcomes.

Murphy RM, Lamb GD (2013). J Physiol 591, 5,823–5,831.



V3 stain-free workflow for a practical, convenient, and reliable total protein loading control in western blotting.

Posch A, Kohn J, Oh K, Hammond M, Liu N (2013). J Vis Exp, video ID 50948.



BIO-RAD

A defined methodology for reliable quantification of western blot data.

Taylor SC, Berkelman T, Yadav G, Hammond M (2013). *Mol Biotechnol* 55, 217–226.



Comparison of stain-free gels with traditional immunoblot loading control methodology.

Colella AD, Chegenii N, Tea MN, Gibbins IL, Williams KA, Chataway TK (2012). *Anal Biochem* 430, 108–110.



Cardiovascular and Skeletal Muscle Biology

NAD(P)H oxidase subunit p47phox is elevated and p47phox knockout prevents diaphragm contractile dysfunction in heart failure.

Ahn B, Beharry AW, Frye GS, Judge AR, Ferreira LF (2015). *Am J Physiol Lung Cell Mol Physiol* 309, L497–505.



Contribution of serotonin to cardiac remodeling associated with hypertensive diastolic ventricular dysfunction in rats.

Ayme-Dietrich E, Marzak H, Lawson R, Mokni W, Wendling O, Combe R, Becker J, Fertak LE, Champy MF, Matz R, Andriantsitohaina R, Doly S, Boutourlinsky K, Maroteaux L, Monassier L (2015). *J Hypertens* 33, 2,310–2,321.



Diaphragm dysfunction caused by sphingomyelinase requires the p47(phox) subunit of NADPH oxidase.

Bost ER, Frye GS, Ahn B, Ferreira LF (2015). *Respir Physiol Neurobiol* 205, 47–52.



Prolonged erythropoietin treatment does not impact gene expression in human skeletal muscle.

Christensen B, Nellemann B, Thorsen K, Nielsen MM, Pedersen SB, Ornstrup MJ, Jørgensen JO, Jessen N (2015). *Muscle Nerve* 51, 554–561.



Functional correction in mouse models of muscular dystrophy using exon-skipping tricyclo-DNA oligomers.

Goyenvalle A, Griffith G, Babbs A, El Andaloussi S, Ezzat K, Avril A, Dugovic B, Chaussonot R, Ferry A, Voit T, Amthor H, Bühr C, Schürch S, Wood MJ, Davies KE, Vaillend C, Leumann C, Garcia L (2015). *Nat Med* 21, 270–275.



VEGF induces stress fiber formation in fibroblasts isolated from dystrophic muscle.

Gutpell KM, Hoffman LM (2015). *J Cell Commun Signal* [published ahead of print Jul 29, 2015]. Accessed October 8, 2015.



Human muscle fibre type-specific regulation of AMPK and downstream targets by exercise.

Kristensen DE, Albers PH, Prats C, Baba O, Birk JB, Wojtaszewski JF (2015). *J Physiol* 593, 2,053–2,069.



The effect of high-intensity training on mitochondrial fat oxidation in skeletal muscle and subcutaneous adipose tissue.

Larsen S, Danielsen JH, Søndergård SD, Søgaaard D, Vigelsoe A, Dybboe R, Skaaby S, Dela F, Helge JW (2015). *Scand J Med Sci Sports* 25, e59–69.



Physical exercise increases autophagic signaling through ULK1 in human skeletal muscle.

Møller AB, Vendelbo MH, Christensen B, Clasen BF, Bak AM, Jørgensen JO, Møller N, Jessen N (2015). *J Appl Physiol* (1985) 118, 971–979.



Three-dimensional structure of the intercalated disc reveals plicate domain and gap junction remodeling in heart failure.

Pinali C, Bennett HJ, Davenport JB, Caldwell JL, Starborg T, Trafford AW, Kitmitto A (2015). *Biophys J* 108, 498–507.



No differential effects of divergent isocaloric supplements on signaling for muscle protein turnover during recovery from muscle-damaging eccentric exercise.

Rahbek SK, Farup J, de Paoli F, Vissing K (2015). *Amino Acids* 47, 767–778.



Role of intrinsic aerobic capacity and ventilator-induced diaphragm dysfunction.

Sollanek KJ, Smuder AJ, Wiggs MP, Morton AB, Koch LG, Britton SL, Powers SK (2015). *J Appl Physiol* (1985) 118, 849–857.



Muscle microvascular adaptation and angiogenic gene induction in response to exercise training are attenuated in middle-aged rats.

Suzuki J (2015). *Comparative Exercise Physiology* 11, 23–33.



GAPDH and β -actin protein decreases with aging, making stain-free technology a superior loading control in western blotting of human skeletal muscle.

Vigelsø A, Dybboe R, Hansen CN, Dela F, Helge JW, Guadalupe Grau A (2015). *J Appl Physiol* (1985) 118, 386–394.



Single-fiber expression and fiber-specific adaptability to short-term intense exercise training of Na⁺-K⁺-ATPase α - and β -isoforms in human skeletal muscle.

Wyckelsma VL, McKenna MJ, Serpiello FR, Lamboley CR, Aughey RJ, Stepto NK, Bishop DJ, Murphy RM (2015). *J Appl Physiol* (1985) 118, 699–706.



Rat skeletal muscle glycogen degradation pathways reveal differential association of glycogen-related proteins with glycogen granules.

Xu H, Stapleton D, Murphy RM (2015). *J Physiol Biochem* 71, 267–280.



Identification of the immunoproteasome as a novel regulator of skeletal muscle differentiation.

Cui Z, Hwang SM, Gomes AV (2014). *Mol Cell Biol* 34, 96–109.



Small heat shock proteins translocate to the cytoskeleton in human skeletal muscle following eccentric exercise independently of phosphorylation.

Frankenberg NT, Lamb GD, Overgaard K, Murphy RM, Vissing K (2014). *J Appl Physiol* (1985) 116, 1,463–1,472.



Subcellular fractionation reveals HSP72 does not associate with SERCA in human skeletal muscle following damaging eccentric and concentric exercise.

Frankenberg NT, Lamb GD, Vissing K, Murphy RM (2014). *J Appl Physiol* 116, 1,503–1,511.



Sarcoplasmic reticulum Ca²⁺ uptake and leak properties, and SERCA isoform expression, in type I and type II fibres of human skeletal muscle.

Lamboley CR, Murphy RM, McKenna MJ, Lamb GD (2014). *J Physiol* 592, 1,381–1,395.



Effect of maternal steroid on developing diaphragm integrity.

Song Y, Demmer DL, Pinniger GJ, Lavin T, MacMillan MV, Pillow JJ, Bakker AJ (2014). *PLoS One* 9, e93224.



Endogenous and maximal sarcoplasmic reticulum calcium content and calsequestrin expression in type I and type II human skeletal muscle fibres.

Lamboley CR, Murphy RM, McKenna MJ, Lamb GD (2013). *J Physiol* 591, 6,053–6,068.



Ca²⁺-dependent proteolysis of junctophilin-1 and junctophilin-2 in skeletal and cardiac muscle.

Murphy RM, Dutka TL, Horvath D, Bell JR, Delbridge LM, Lamb GD (2013). *J Physiol* 591, 719–729.



Changes in plasma membrane Ca-ATPase and stromal interacting molecule 1 expression levels for Ca²⁺ signaling in dystrophic mdx mouse muscle.

Cully TR, Edwards JN, Friedrich O, Stephenson DG, Murphy RM, Launikonis BS (2012). *Am J Physiol Cell Physiol* 303, C567–576.



Effects of carnosine on contractile apparatus Ca²⁺ sensitivity and sarcoplasmic reticulum Ca²⁺ release in human skeletal muscle fibers.

Dutka TL, Lamboley CR, McKenna MJ, Murphy RM, Lamb GD (2012). *J Appl Physiol* 112, 728–736.



Absolute amounts and diffusibility of HSP72, HSP25, and α B-crystallin in fast- and slow-twitch skeletal muscle fibers of rat.

Larkins NT, Murphy RM, Lamb GD (2012). *Am J Physiol Cell Physiol* 302, C228–239.



Influences of temperature, oxidative stress, and phosphorylation on binding of heat shock proteins in skeletal muscle fibers.

Larkins NT, Murphy RM, Lamb GD (2012). *Am J Physiol Cell Physiol* 303, C654–665.



S-glutathionylation of troponin I (fast) increases contractile apparatus Ca²⁺ sensitivity in fast-twitch muscle fibers of rats and humans.

Mollica JP, Dutka TL, Merry TL, Lamboley CR, McConell GK, McKenna MJ, Murphy RM, Lamb GD (2012). *J Physiol* 590, 1,443–1,463.



Cancer Biology

Cellular oxidative stress response mediates radiosensitivity in Fus1-deficient mice.

Yazlovitskaya EM, Voziyan PA, Manavalan T, Yarbrough WG, Ivanova AV (2015). *Cell Death Dis* 6, e1652.



Elevated YKL40 is associated with advanced prostate cancer (PCa) and positively regulates invasion and migration of PCa cells.

Jeet V, Tevz G, Lehman M, Hollier B, Nelson C (2014). *Endocr Relat Cancer* 21, 723–737.



BRCA2 is epistatic to the RAD51 paralogs in response to DNA damage.

Jensen RB, Ozes A, Kim T, Estep A, Kowalczykowski SC (2013). *DNA Repair (Amst)* 12, 306–311.



Altered mRNA expression related to the apoptotic effect of three xanthenes on human melanoma SK-MEL-28 cell line.

Wang JJ, Zhang W, Sanderson BJ (2013). *BioMed Res Int*, article ID 715603.



Differential network analysis applied to preoperative breast cancer chemotherapy response.

Warsow G, Struckmann S, Kerkhoff C, Reimer T, Engel N, Fuellen G (2013). *PLoS One* 8, e81784.



Neurobiology

Changes in the endocannabinoid signaling system in CNS structures of TDP-43 transgenic mice: Relevance for a neuroprotective therapy in TDP-43-related disorders.

Espejo-Porras F, Piscitelli F, Verde R, Ramos JA, Di Marzo V, de Lago E, Fernández-Ruiz J (2015). *J Neuroimmune Pharmacol* 10, 233–244.



Input-specific regulation of hippocampal circuit maturation by non-muscle myosin IIB.

Ozkan ED, Aceti M, Creson TK, Rojas CS, Hubbs CR, McGuire MN, Kakad PP, Miller CA, Rumbaugh G (2015). *J Neurochem* 134, 429–444.



R-baclofen reverses a social behavior deficit and elevated protein synthesis in a mouse model of fragile X syndrome.

Qin M, Huang T, Kader M, Krych L, Xia Z, Burlin T, Zeidler Z, Zhao T, Smith CB (2015). *Int J Neuropsychopharmacol* 18, pyv034.



Time-dependent changes in the mouse hippocampal synaptic membrane proteome after contextual fear conditioning.

Rao-Ruiz P, Carney KE, Pandya N, van der Loo RJ, Verheijen MH, van Nierop P, Smit AB, Spijker S (2015). *Hippocampus* [published ahead of print Feb 23, 2015]. Accessed October 8, 2015.



Thioredoxin 1 and glutaredoxin 2 contribute to maintain the phenotype and integrity of neurons following perinatal asphyxia.

Romero JI, Hanschmann EM, Gellert M, Eitner S, Holubiec MI, Blanco-Calvo E, Lillig CH, Capani F (2015). *Biochim Biophys Acta* 1850, 1,274–1,285.



Alteration of mTOR signaling occurs early in the progression of Alzheimer disease (AD): Analysis of brain from subjects with pre-clinical AD, amnesic mild cognitive impairment and late-stage AD.

Tramutola A, Triplett JC, Di Domenico F, Niedowicz DM, Murphy MP, Coccia R, Perluigi M, Butterfield DA (2015). *J Neurochem* 133, 739–749.



Disruption of astrocyte-neuron cholesterol cross talk affects neuronal function in Huntington's disease.

Valenza M, Marullo M, Di Paolo E, Cesana E, Zuccato C, Biella G, Cattaneo E (2015). *Cell Death Differ* 22, 690–702.



Proteomic analysis of gliosomes from mouse brain: Identification and investigation of glial membrane proteins.

Carney KE, Milanese M, van Nierop P, Li KW, Oliet SH, Smit AB, Bonanno G, Verheijen MH (2014). *J Proteome Res* 13, 5,918–5,927.



Neuropathological role of PI3K/Akt/mTOR axis in Down syndrome brain.

Perluigi M, Pupo G, Tramutola A, Cini C, Coccia R, Barone E, Head E, Butterfield DA, Di Domenico F (2014). *Biochim Biophys Acta* 1842, 1,144–1,153.



Doubly phosphorylated peptide vaccines to protect transgenic P301S mice against Alzheimer's disease like tau aggregation.

Richter M, Mewes A, Fritsch M, Krügel U, Hoffmann R, Singer D (2014). *Vaccines* 2, 601–623.



Reducing hippocampal extracellular matrix reverses early memory deficits in a mouse model of Alzheimer's disease.

Végh MJ, Heldring CM, Kamphuis W, Hijazi S, Timmerman AJ, Li KW, van Nierop P, Mansvelter HD, Hol EM, Smit AB, van Kesteren RE (2014). *Acta Neuropathol Commun* 2, 76.



Hippocampal extracellular matrix levels and stochasticity in synaptic protein expression increase with age and are associated with age-dependent cognitive decline.

Végh MJ, Rausell A, Loos M, Heldring CM, Jurkowski W, van Nierop P, Paliukovich I, Li KW, del Sol A, Smit AB, Spijker S, van Kesteren RE (2014). *Mol Cell Proteomics* 13, 2,975–2,985.



A trifluoromethyl analogue of celecoxib exerts beneficial effects in neuroinflammation.

Di Penta A, Chiba A, Alloza I, Wyssenbach A, Yamamura T, Villoslada P, Miyake S, Vandebroek K (2013). *PLoS One* 8, e83119.



Immunology

Leukocyte inclusion within a platelet rich plasma-derived fibrin scaffold stimulates a more pro-inflammatory environment and alters fibrin properties.

Anitua E, Zalduendo M, Troya M, Padilla S, Orive G (2015). *PLoS One* 10, e0121713.



Complement component C5 recruits neutrophils in the absence of C3 during respiratory infection with modified vaccinia virus Ankara.

Price PJ, Bánki Z, Scheideler A, Stoiber H, Verschoor A, Sutter G, Lehmann MH (2015). *J Immunol* 194, 1,164–1,168.



Activation of the P2X7 receptor induces the rapid shedding of CD23 from human and murine B cells.

Pupovac A, Geraghty NJ, Watson D, Sluyter R (2015). *Immunol Cell Biol* 93, 77–85.



Thioester-containing proteins of the tick *Ixodes ricinus*: Gene expression, response to microbial challenge and their role in phagocytosis of the yeast *Candida albicans*.

Urbanová V, Šima R, Šauman I, Hajdušek O, Kopaček P (2015). *Dev Comp Immunol* 48, 55–64.



Activation of histamine H4 receptor inhibits TNF α /IMD-0354-induced apoptosis in human salivary NS-SV-AC cells.

Stegajev V, Kouri VP, Salem A, Rozov S, Stark H, Nordström DC, Konttinen YT (2014). *Apoptosis* 19, 1,702–1,711.



Gross cystic disease fluid protein-15 (GCDFP-15)/prolactin-inducible protein (PIP) as functional salivary biomarker for primary Sjögren's syndrome.

Gallo A, Martini D, Sernissi F, Giacomelli C, Pepe P, Rossi C, Riveros PP, Mosca M, Alevizos I, Baldini C (2013). *J Genet Syndr Gene Ther* 4, article ID 10.4172/2157-7412.1000140.



Nutrition

Anthocyanin-rich black elderberry extract improves markers of HDL function and reduces aortic cholesterol in hyperlipidemic mice.

Farrell N, Norris G, Lee SG, Chun OK, Blesso CN (2015). *Food Funct* 6, 1,278–1,287.



Impact of total solid content and extraction pH on enzyme-aided recovery of protein from defatted rapeseed (*Brassica rapa L.*) press cake and physicochemical properties of the protein fractions.

Rommi K, Ercili-Cura D, Hakala TK, Nordlund E, Poutanen K, Lantto R (2015). *J Agric Food Chem* 63, 2,997–3,003.



Restriction on an energy-dense diet improves markers of metabolic health and cellular aging in mice through decreasing hepatic mTOR activity.

Schloesser A, Campbell G, Glüer CC, Rimbach G, Huebbe P (2015). *Rejuvenation Res* 18, 30–39.



Dietary tocotrienol/γ-cyclodextrin complex increases mitochondrial membrane potential and ATP concentrations in the brains of aged mice.

Schloesser A, Esatbeyoglu T, Piegholdt S, Dose J, Ikuta N, Okamoto H, Ishida Y, Terao K, Matsugo S, Rimbach G (2015). *Oxid Med Cell Longev* [published ahead of print Aug 2, 2015]. Accessed October 8, 2015.



Six weeks' aerobic retraining after two weeks' immobilization restores leg lean mass and aerobic capacity but does not fully rehabilitate leg strength in young and older men.

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Curcumin may impair iron status when fed to mice for six months.

Chin D, Huebbe P, Frank J, Rimbach G, Pallauf K (2014). *Redox Biol* 2, 563–569.



Goat milk consumption modulates liver divalent metal transporter 1 (DMT1) expression and serum hepcidin during Fe repletion in Fe-deficiency anemia.

Díaz-Castro J, Pulido M, Alférez MJ, Ochoa JJ, Rivas E, Hijano S, López-Aliaga I (2014). *J Dairy Sci* 97, 147–154.



Diabetic Disease

Human muscle fiber type-specific insulin signaling: Impact of obesity and type 2 diabetes.

Albers PH, Pedersen AJ, Birk JB, Kristensen DE, Vind BF, Baba O, Nøhr J, Højlund K, Wojtaszewski JF (2015). *Diabetes* 64, 485–497.



Apolipoprotein E (APOE) genotype regulates body weight and fatty acid utilization — Studies in gene-targeted replacement mice.

Huebbe P, Dose J, Schloesser A, Campbell G, Glüer CC, Gupta Y, Ibrahim S, Minihane AM, Baines JF, Nebel A, Rimbach G (2015). *Mol Nutr Food Res* 59, 334–343.



Overexpression of sphingosine kinase 1 in liver reduces triglyceride content in mice fed a low but not high-fat diet.

Kowalski GM, Kloehn J, Burch ML, Selathurai A, Hamley S, Bayol SA, Lamon S, Watt MJ, Lee-Young RS, McConville MJ, Bruce CR (2015). *Biochim Biophys Acta* 1851, 210–219.



Positive interaction between prebiotics and thiazolidinedione treatment on adiposity in diet-induced obese mice.

Alligier M, Dewulf EM, Salazar N, Mairal A, Neyrinck AM, Cani PD, Langin D, Delzenne NM (2014). *Obesity (Silver Spring)* 22, 1,653–1,661.



Diabetes-induced increase of renal medullary hydrogen peroxide and urinary angiotensinogen is similar in normotensive and hypertensive rats.

Patinha D, Afonso J, Sousa T, Morato M, Albino-Teixeira A (2014). *Life Sci* 108, 71–79.



Modulation of CYP3a expression and activity in mice models of type 1 and type 2 diabetes.

Patoine D, Petit M, Pilote S, Picard F, Drolet B, Simard C (2014). *Pharmacol Res Perspect* 2, e00082.



Developmental Biology

Subcellular localization of phospholipase C ζ in human sperm and its absence in DPY19L2-deficient sperm are consistent with its role in oocyte activation.

Escoffier J, Yassine S, Lee HC, Martinez G, Delaroche J, Coutton C, Karaouzène T, Zouari R, Metzler-Guillemain C, Pernet-Gallay K, Hennebicq S, Ray PF, Fissore R, Arnoult C (2015). *Mol Hum Reprod* 21, 157–168.



Developmental expression and hypoxic induction of hypoxia inducible transcription factors in the zebrafish.

Köblitz L, Fiechtner B, Baus K, Lussnig R, Pelster B (2015). *PLoS One* 10, e0128938.



Alterations of protein expression in serum of infants with intrauterine growth restriction and different gestational ages.

Ruiz-González MD, Cañete MD, Gómez-Chaparro JL, Abril N, Cañete R, López-Barea J (2015). *J Proteomics* 119, 169–182.



Dynamics of Sun5 localization during spermatogenesis in wild type and Dpy19l2 knock-out mice indicates that Sun5 is not involved in acrosome attachment to the nuclear envelope.

Yassine S, Escoffier J, Abi Nahed R, Pierre V, Karaouzene T, Ray PF, Arnoult C (2015). *PLoS One* 10, e0118698.



Loss of ascl1a prevents secretory cell differentiation within the zebrafish intestinal epithelium resulting in a loss of distal intestinal motility.

Roach G, Heath Wallace R, Cameron A, Emrah Ozel R, Hongay CF, Baral R, Andreescu S, Wallace KN (2013). *Dev Biol* 376, 171–186.



Osteobiology

Nuclear Nrf2 induction by protein transduction attenuates osteoclastogenesis.

Kanzaki H, Shinohara F, Kajiya M, Fukaya S, Miyamoto Y, Nakamura Y (2014). *Free Radic Biol Med* 77, 239–248.



The Keap1/Nrf2 protein axis plays a role in osteoclast differentiation by regulating intracellular reactive oxygen species signaling.

Kanzaki H, Shinohara F, Kajiya M, Kodama T (2013). *J Biol Chem* 288, 23,009–23,020.



Systems Biology

iTRAQ analysis of hepatic proteins in free-living *Mus spretus* mice to assess the contamination status of areas surrounding Doñana National Park (SW Spain).

Abril N, Chicano-Gálvez E, Michán C, Pueyo C, López-Barea J (2015). *Sci Total Environ* 523, 16–27.



Proteomic profile of the skin mucus of farmed gilthead seabream (*Sparus aurata*).

Jurado J, Fuentes-Almagro CA, Guardiola FA, Cuesta A, Esteban MÁ, Prieto-Álamo MJ (2015). *J Proteomics* 120, 21–34.



Heterologous microarray analysis of transcriptome alterations in *Mus spretus* mice living in an industrial settlement.

Abril N, Ruiz-Laguna J, García-Sevillano MÁ, Mata AM, Gómez-Ariza JL, Pueyo C (2014). *Environ Sci Technol* 48, 2,183–2,192.



Endocrinology

Effects of raloxifene and estrogen on bioactive IGF1 in GH-deficient women.

Birzniece V, Magnusson NE, Ho KK, Frystyk J (2014). Eur J Endocrinol 170, 375–383.



Whole body metabolic effects of prolonged endurance training in combination with erythropoietin treatment in humans: A randomized placebo controlled trial.

Christensen B, Nellemann B, Larsen MS, Thams L, Sieljacks P, Vestergaard PF, Bibby BM, Vissing K, Stødkilde-Jørgensen H, Pedersen SB, Møller N, Nielsen S, Jessen N, Jørgensen JO (2013). Am J Physiol Endocrinol Metab 305, E879–889.



Molecular Biology

Sumoylation of Rap1 mediates the recruitment of TFIID to promote transcription of ribosomal protein genes.

Chymkowitz P, Nguéa AP, Aanes H, Koehler C, Thiede B, Lorenz S, Meza-Zepeda LA, Klungland A, Enserink JM (2015). Genome Res 25, 897–906.



Deviating the level of proliferating cell nuclear antigen in *Trypanosoma brucei* elicits distinct mechanisms for inhibiting proliferation and cell cycle progression.

Valenciano AL, Ramsey AC, Mackey ZB (2015). Cell Cycle 14, 674–688.



Rapid and precise engineering of the *Caenorhabditis elegans* genome with lethal mutation co-conversion and inactivation of NHEJ Repair.

Ward JD (2015). Genetics 199, 363–377.



Biochemistry

PRGF exerts a cytoprotective role in zoledronic acid-treated oral cells.

Anitua E, Zalduendo M, Troya M, Orive G (2015). Clin Oral Investig [published ahead of print Jul 23, 2015]. Accessed October 8, 2015.



Precise construction of oligonucleotide-Fab fragment conjugate for homogeneous immunoassay using HaloTag technology.

Päkkilä H, Peltomaa R, Lamminmäki U, Soukka T (2015). Anal Biochem 472, 37–44.



A mutation in transmembrane domain 7 (TM7) of excitatory amino acid transporters disrupts the substrate-dependent gating of the intrinsic anion conductance and drives the channel into a constitutively open state.

Torres-Salazar D, Jiang J, Divito CB, Garcia-Olivares J, Amara SG (2015). J Biol Chem 290, 22,977–22,990.



R270C polymorphism leads to loss of function of the canine P2X7 receptor.

Spildrejorde M, Bartlett R, Stokes L, Jalilian I, Peranec M, Sluyter V, Curtis BL, Skarratt KK, Skora A, Bakhsh T, Seavers A, McArthur JD, Dowton M, Sluyter R (2014). Physiol Genomics 46, 512–522.



Versatile peroxidase as a valuable tool for generating new biomolecules by homogeneous and heterogeneous cross-linking.

Salvachúa D, Prieto A, Mattinen ML, Tamminen T, Liitiä T, Lille M, Willför S, Martínez AT, Martínez MJ, Faulds CB (2013). Enzyme Microb Technol 52, 303–311.



Urology

Pannexin 1 channels mediate the release of ATP into the lumen of the rat urinary bladder.

Beckel JM, Daugherty SL, Tyagi P, Wolf-Johnston AS, Birder LA, Mitchell CH, de Groat WC (2015). *J Physiol* 593, 1,857–1,871.



Ophthalmology

Plasma rich in growth factors (PRGF) eye drops stimulates scarless regeneration compared to autologous serum in the ocular surface stromal fibroblasts.

Anitua E, de la Fuente M, Muruzabal F, Riestra A, Merayo-Llodes J, Orive G (2015). *Exp Eye Res* 135, 118-126.



Microbiology

Proteome analysis identifies the Dpr protein of *Streptococcus mutans* as an important factor in the presence of early streptococcal colonizers of tooth surfaces.

Yoshida A, Niki M, Yamamoto Y, Yasunaga A, Ansai T (2015). *PLoS One* 10, e0121176.



Quantification of protein copy number in yeast: The NAD⁺ metabolome.

Mei SC, Brenner C (2014). *PLoS One* 9, e106496.



Hematology

Lack of expression and function of erythropoietin receptors in the kidney.

Elliott S, Busse L, Swift S, McCaffery I, Rossi J, Kassner P, Begley CG (2012). *Nephrol Dial Transplant* 27, 2,733–2,745.



BioEducation

A streamlined western blot exercise: An efficient and greener approach in the laboratory classroom.

Ness TL, Robinson RL, Mojadedi W, Peavy L, Weiland MH (2015). *Biochem Mol Biol Educ* 43, 358–365.



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