

## VOLUME 55, CONTENTS

### REVIEW ARTICLES

- VONDRUSKOVA H, SLAMOVA R, TRCKOVA M, ZRALY Z, PAVLIK I: Alternatives to antibiotic growth promoters in prevention of diarrhoea in weaned piglets ..... 199

- SPINELLA G, TAMBURRO R, LOPRETE G, VILAR JM, VALENTINI S: Surgical repair of Achilles tendon rupture in dogs: a review of the literature, a case report and new perspectives ..... 303

- RAJCHARD J: Biologically active substances of bird skin ..... 413

- DVORAK M, VLASIN M, DVORAKOVA M, RAUSER P, LEXMAULOVA L, GREGOR Z, STAFFA R: Heparin and its derivatives in the treatment of arterial thrombosis ..... 523

### ORIGINAL PAPERS

- PAVLIK I, HORVATHOVA A, BARTOSOVA L, BABAK V, MORAVKOVA M: IS900 RFLP types of *Mycobacterium avium* subsp. *paratuberculosis* in faeces and environmental samples on four dairy cattle farms ..... 1

- LOPATAROVA M, CECH S, KRONTORAD P, HOLY L, LALOVA H, DOLEZEL R: Conception rate after sex determination and cryopreservation of D7 bovine embryos: ..... 10

- MANGA-GONZALEZ MY, QUIROZ-ROMERO H, GONZALEZ-LANZA C, MINAMBRES B, OCHOA P: Strategic control of *Dicrocoelium dendriticum* (Digenea) egg excretion by naturally infected sheep ..... 19

- DURAS GOMERCIC M, TRBOJEVIC VUKICEVIC T, GOMERCIC T, GALOV A, FRUK T, GOMERCIC H: The cisterna chyli and thoracic duct in pigs (*Sus scrofa domestica*) ..... 30

- KAEVSKA M, HRUSKA K: Analysis of publications on paratuberculosis from 1995 to 2009 with emphasis on the period from 2005 to 2009 ..... 43

- KRIZOVA K, MATLOVA L, HORVATHOVA A, MORAVKOVA M, BERAN V, BOISSELET T, BABAK V, SLANA I, PAVLIK I: Mycobacteria in the environment of pig farms in the Czech Republic between 2003 and 2007 ... 55

- OUWEHAND AC, TIIHONEN K, KETTUNEN H, PEURANEN S, SCHULZE H, RAUTONEN N: *In vitro* effects of essential oils on potential pathogens and beneficial members of the normal microbiota ..... 71

- HALIGUR A, DUZLER A: Course and branch of the celiac artery in the red falcon (*Buteo rufinus*) ..... 79

- BRTKOVA A, FILIPOVA M, DRAHOVSKA H, BUJDAKOVA H: Characterization of enterococci of animal and environmental origin using phenotypic methods and comparison with PCR based methods ..... 97

- FICHTELOVA V, KOVACIK K: Characterization of two BHV-4 strains isolated in the Czech Republic ..... 106

- ISHII M, AOKI T, YAMAKAWA K, UYAMA T, EL-KHODERY S, MATSUI M, MIYAKE Y: Uterine prolapse in cows: Effect of raising the rear end on the clinical outcomes and reproductive performance ..... 113

- KOLAR M, BARDON J, CHROMA M, HRICOVA K, STOSOVA T, SAUER P, KOUKALOVA D: ESBL and AmpC beta-lactamase-producing *Enterobacteriaceae* in poultry in the Czech Republic ..... 119

- WOO D-C, CHOI C-B, NAM J-W, RYU K-N, JAHNG G-H, LEE S-H, LEE D-W, KIM S-Y, KIM H-Y, AHN K-J, CHOE B-Y: Quantitative analysis of hydrocephalic ventricular alterations in Yorkshire terriers using magnetic resonance imaging ..... 125

- KRAMETTER-FROETSCHER R, MASON N, ROETZEL J, BENETKA V, BAGO Z, MOESTL K, BAUMGARTNER W: Effects of Border disease virus (genotype 3) naturally transmitted by persistently infected sheep to pregnant heifers and their progeny ..... 145

ANTOSIK P, KEMPISTY B, JACKOWSKA M, BUKOWSKA D, LIANERI M, BRUSSOW KP, WOZNA M, JASKOWSKI JM: The morphology of porcine oocytes is associated with <i>zona pellucida</i> glycoprotein 3 and integrin beta 2 protein levels .....	154
CRNOGAJ M, PETLEVSKI R, MRLJAK V, KIS I, TORTI M, KUCER N, MATIJATKO V, SACER I, STOKOVIC I: Malondialdehyde levels in serum of dogs infected with <i>Babesia canis</i> .....	163
DU S-J, KUO H-C, CHENG C-H, FEI ACY, WEI H-W, CHANG S-K: Molecular mechanisms of ceftazidime resistance in <i>Pseudomonas aeruginosa</i> isolates from canine and human infections .....	172
AYDIN A: The spinal nerves that constitute the plexus lumbosacrales of the red squirrel ( <i>Sciurus vulgaris</i> ) .....	183
KHOL JL, BERAN V, KRALIK P, TRCKOVA M, PAVLIK I, BAUMGARTNER W: Grass silage contaminated with <i>Mycobacterium avium</i> subspecies paratuberculosis (MAP): a possible source of paratuberculosis infection in ruminants? .....	225
TOPIC POPOVIC N, BENUSSI SKUKAN A, DZIDARA P, COZ-RAKOVAC R, STRUNJAK-PEROVIC I, KOZACINSKI L, JADAN M, BRLEK-GORSKI D: Microbiological quality of marketed fresh and frozen seafood caught off the Adriatic coast of Croatia .....	233
SIENKIEWICZ W, DUDEK A: Sources of the motor and somatic sensory innervation of the trapezius muscle in the rat .....	242
AKSAKAL A: Analysis of whole cell protein profiles of <i>Salmonella</i> serovars isolated from chicken, turkey and sheep faeces by SDS-PAGE .....	259
MISTA D, PIEKARSKA J, HOUSZKA M, ZAWADZKI W, GORCZYKOWSKI M: The influence of orally administered short chain fatty acids on intestinal histopathological changes and intensity of <i>Trichinella spiralis</i> infection in mice .....	264
HAJIMOHAMMADI A, BADIEI K, MOSTAGHNI K, POURJAFAR M: Serum pepsinogen level and abomasal ulcerations in experimental abomasal displacement in sheep .....	311
VILLARREAL I, VRANCKX K, DUCHATEAU L, PASMANS F, HAEBROUCK F, JENSEN JC, NANJIANI IA, MAES D: Early <i>Mycoplasma hyopneumoniae</i> infections in European suckling pigs in herds with respiratory problems: detection rate and risk factors .....	318
KAEVSKA M, SLANA I, KRALIK P, PAVLIK I: Examination of <i>Mycobacterium avium</i> subsp. <i>avium</i> distribution in naturally infected hens by culture and triplex quantitative real time PCR .....	325
JANECZEK M, CHROSZCZ A, MIKLIKOWA Z, FABIS M: The pathological changes in the hind limb of a horse from the Roman Period .....	331
ATEF YEKTA M, VERDONCK F, VAN DEN BROECK W, GODDEERIS BM, COX E, VANROMPAY D: Lactoferrin inhibits <i>E. coli</i> O157:H7 growth and attachment to intestinal epithelial cells .....	359
SLANY M, SVOBODOVA J, ETTLOVA A, SLANA I, MRLIK V, PAVLIK I: <i>Mycobacterium arupense</i> among the isolates of non-tuberculous mycobacteria from human, animal and environmental samples ...	369
SIROTKIN AV, KACANIOVA M: The effect of high temperature on swine ovarian function <i>in vitro</i> .....	377
CHEDIACK JG, CID FD, FASULO SV, CAVIEDES-VIDAL E: Chronic cannulation in the small intestine of feral pigeons ( <i>Columba livia</i> ) to assess bioavailability .....	383
ARI HH, SOYGUDER Z, CINAROGLU S: Macroanatomy of the cranial cervical ganglion in Angora goats ...	389
ESCRIBANO BM, TUNEZ I, REQUENA F, RUBIO MD, DE MIGUEL R, MONTILLA P, TOVAR P, AGUERA EI: Effects of an aerobic training program on oxidative stress biomarkers in bulls .....	422
MARTECIKOVA S, HULINKA P, RECKOVA Z, PAVLIK A, JESETA M, MACHATKOVA M: Effect of acrosome reaction progress in frozen-thawed boar spermatozoa on the efficiency of <i>in vitro</i> oocyte fertilization ....	429
RAUSER P, STEHLIK L, PROKS P, SRNEC R, NECAS A: Effect of seven-day administration of carprofen or meloxicam on renal function in clinically healthy miniature pigs .....	438

PATSCHOVA M, KABES R, KRISOVA S: The effects of inhalation salbutamol administration on systemic and pulmonary hemodynamic, pulmonary mechanics and oxygen balance during general anaesthesia in the horse .....	445
TLAK GAJGER I, VUGREK O, GRILEC D, PETRINEC Z: Prevalence and distribution of <i>Nosema ceranae</i> in Croatian honeybee colonies .....	457
ARDAG AKDOGAN H, SEN A: Characterization of drug metabolizing enzymes and assessment of aging in the gilthead seabream ( <i>Sparus aurata</i> ) liver .....	463
KAEVSKA M, HRUSKA K: Research on <i>Mycobacterium avium</i> during the period 1995 to 2009 .....	473
VAN MEENSEL J, KANORA A, LAUWERS L, JOURQUIN J, GOOSSENS L, VAN HUYLENBROECK G: From research to farm: <i>ex ante</i> evaluation of strategic deworming in pig finishing .....	483
JATKAUSKAS J, VROTNIAKIENE V: Effects of probiotic dietary supplementation on diarrhoea patterns, faecal microbiota and performance of early weaned calves .....	494
DOLEZEL R, PALENIK T, CECH S, KOHOUTOVA L, VYSKOCIL M: Bacterial contamination of the uterus in cows with various clinical types of metritis and endometritis and use of hydrogen peroxide for intrauterine treatment .....	504
ANTOSIK P, KEMPISTY B, JACKOWSKA M, PIOTROWSKA H, BUKOWSKA D, WOZNA M, LIANERI M, BRUSSOW K-P, JASKOWSKI JM: Assessment of transcript and protein levels contributing to cell cycle control and gap junction connections in morphologically variable groups of porcine cumulus-oocyte complexes .....	512
ADAMIAK Z, ROTKIEWICZ T: A histological evaluation of bone calluses in the treatment of tibia fractures in sheep with the use of a semicircular fixator .....	547
SIENGDEE P, NGANVONGPANIT K, POTHACHAROEN P, CHOMDEJ S, MEKCHAY S, ONG-CHAI S: Effects of bromelain on cellular characteristics and expression of selected genes in canine <i>in vitro</i> chondrocyte culture .....	551
KAEVSKA M, HRUSKA K: Mycobacteria in water, feedstocks and food: analysis of publications .....	571
MAKAREVICH AV, KUBOVICOVA E, SIROTKIN AV, PIVKO J: Demonstration of the effect of epidermal growth factor on ram sperm parameters using two fluorescent assays .....	581
HAILAT NQ, HANANEH W, METEKIA AS, STABEL JR, AL-MAJALI A, LAIFI S: Pathology of subclinical paratuberculosis (Johne's Disease) in Awassi sheep with reference to its occurrence in Jordan .....	590
LEE H, KIM J, CHO Y, KIM M, KIM N, LEE K: Three-dimensional computed tomographic volume rendering imaging as a teaching tool in veterinary radiology instruction .....	603
VRUBLOVA E, VOSTALOVA J, EHREMAN J, PALIKOVA I, VRBKova J, VACEK J, CIBICEK N, VECERA R, ULRICOVA J, SIMANEK V: The phylogenetic feed additive Sangrovit modulates dextran sulfate sodium-Induced colitis in rats .....	610
YAMAN I, DURMUS AS, CERIBASI S, YAMAN M: Effects of <i>Nigella sativa</i> and silver sulfadiazine on burn wound healing in rats .....	619

#### CASE REPORTS

SFACTERIA A, MACRÌ F, PERILLO L, RAPISarda G, LANTERI G, MAZZULLO G: Cytologic and histologic features of spinal cord ependymoma in a young dog .....	35
POMIANOWSKI A, ADAMIAK Z: Bone-conducted brainstem auditory evoked response in a dog with total bilateral ear canal ablation .....	39
KRIZ P, SLANA I, MRLIK V, MORAVKOVA M, KRALOVA A, KRIZOVA K, PAVLIK I: <i>Mycobacterium avium</i> subsp. <i>avium</i> in domestic pigeons ( <i>Columba livia f. domestica</i> ) diagnosed by direct conventional multiplex PCR .....	87

SLANY M, KNOTEK Z, SKORIC M, KNOTKOVA Z, SVOBODOVA J, MRLIK V, MORAVKOVA M, PAVLIK I: Systemic mixed infection in a brown caiman ( <i>Caiman crocodilus fuscus</i> ) caused by <i>Mycobacterium szulgai</i> and <i>M. chelonae</i> .....	91
MATOS F, AMADO A, BOTELHO A: Molecular typing of <i>Mycobacterium bovis</i> isolated in the first outbreak of bovine tuberculosis in the Azores Islands .....	133
LEW M, LEW S, ROZICKA A: Upper eyelid and medial canthus reconstructive surgery after histiocytoma resection in a dog .....	137
BODECEK S, JAHN P, DOBESOVA O, VAVROUCHOVA E: Equine cyathostomosis: case reports .....	187
SMOLEC O, KOS J, VNUK D, STEJSKAL M, BRKLJACA BOTTEGARO N, ZOBEL R: Multiple congenital malformation in a Simental female calf .....	194
PARK S, PARK J, KIM JM, KIM JH, SON J, CHANG D, CHOI SH, KIM G: Penetrating cranial injury due to gunshot in a dog .....	253
KIM NS, KIM HC, SIM C, JI JR, KIM NS, PARK BK: Congenital infection with <i>Setaria digitata</i> and <i>Setaria marshalli</i> in the thoracic cavity of a Korean calf .....	275
MENDOZA FJ, PEREZ-ECIJA A, ESTEPA JC: Inguinal-scrotal herniation and torsion of the large colon in an adult Andalusian stallion .....	281
KOZDROWSKI R, HENKLEWSKI R, DZIECIOL M, BEDNARSKI M: A large urolith in an eight year-old mare .....	285
BLUTKE A, PARZEFALL B, STEGER A, GOEDDE T, HERMANNS W: Inflammatory polyp in the middle ear of a dog .....	289
HABUS J, STRITOF Z, STEVANOVIC V, MARTINKOVIC K, MILAS Z, STARESINA V, TURK N: Dual infection of rabies virus and <i>Babesia canis</i> in a dog .....	294
ALVAREZ-PEREZ S, MATEOS A, DOMINGUEZ L, MARTINEZ-NEVADO E, BLANCO JL, GARCIA ME: Isolation of <i>Rhodotorula mucilaginosa</i> from skin lesions in a Southern sea lion ( <i>Otaria flavescens</i> ) .....	297
MOYANO MR, MOLINA AM, LORA AJ, MENDEZ J, RUEDA A: Tremorgenic mycotoxicosis caused by <i>Paspalum paspaloides</i> (Michx.) Scribner infected by <i>Claviceps paspali</i> .....	336
SHITAYE JE, HALOUZKA R, SVOBODOVA J, GRYMOVA V, GRYM M, SKORIC M, FICTUM P, BERAN V, SLANY M, PAVLIK I: First isolation of <i>Mycobacterium genavense</i> in a blue headed parrot ( <i>Pionus menstruus</i> ) imported from Surinam (South America) to the Czech Republic .....	339
SKORIC M, FICTUM P, FRGELECOVA L, KRIZ P, SLANA I, KAEVSKA M, PAVLIK I: Avian tuberculosis in a captured Ruppell's griffon vulture ( <i>Gyps ruppellii</i> ) .....	348
RADISIC B, SINDICIC M, HUBER D, KUSAK J, GOMERCIC T, VNUK D, MATICIC D, SLAVICA A: Ovariectomy of a brown bear ( <i>Ursus arctos</i> ) .....	353
TOFANT A, OSTOVIC M, WOLF S, EKERT KABALIN A, PAVICIC Z, GRIZELJ J: Association between over-chlorinated drinking water and adverse reproductive outcomes in gilts and sows .....	394
MENDOZA FJ, LOPEZ M, DIEZ E, PEREZ-ECIJA A, ESTEPA JC: Uroperitoneum secondary to rupture of the urachus associated with <i>Clostridium</i> spp. infection in a foal .....	399
SERIN G, AYDOGAN A, YAYGINGUL R, TUNCA R: Uterine leiomyosarcoma in a dog .....	405
SKORIC M, FICTUM P, JEKL V, HAUPTMAN K, KNOTEK Z, HERMANOVA M: Vaginal leiomyosarcoma in a degu ( <i>Octodon degus</i> ) .....	409
LAUS F, PAGGI E, CERQUETELLA M, SPAZIANTE D, SPATERNA A, TESEI B: Guttural pouch mycosis in a donkey ( <i>Equus asinus</i> ) .....	561

SMOLEC O, VNUK D, KOS J, BRKLJACA BOTTEGARO N, PIRKIC B: Repair of cleft palate in a calf using polypropylene mesh and palatal mucosal flap .....	566
PRIBYLOVA R, SLANA I, LAMKA J, BABAK V, HRUSKA K, PAVLIK I: <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> in a mouflon herd without clinical symptoms monitored using IS900 real-time PCR ....	625
KUMAR P, PAWAIYA RVS, MADHU BP: Multiple mammary tumours in a bitch: analysis of mitotic index, AgNOR count and c-erbB2 expression status .....	631

**AUTHOR INDEX**

- ADAMIAK Z ... 39, 547  
 AGUERA EI ... 422  
 AHN K-J ... 125  
 AKSAKAL A ... 259  
 AL-MAJALI A ... 590  
 ALVAREZ-PEREZ S ... 297  
 AMADO A ... 133  
 ANTOSIK P ... 154, 512  
 AOKI T ... 113  
 ARDAG AKDOGAN H ... 463  
 ARI HH ... 389  
 ATEF YEKTA M ... 359  
 AYDIN A ... 183  
 AYDOGAN A ... 405  
 BABAK V ... 1, 55, 625  
 BADIEI K ... 311  
 BAGO Z ... 145  
 BARDON J ... 119  
 BARTOSOVA L ... 1  
 BAUMGARTNER W ... 145, 225  
 BEDNARSKI M ... 285  
 BENETKA V ... 145  
 BENUSSI SKUKAN A ... 233  
 BERAN V ... 55, 225, 339  
 BLANCO JL ... 297  
 BLUTKE A ... 289  
 BODECEK S ... 187  
 BOISSELET T ... 55  
 BOTELHO A ... 133  
 BRKLJACA BOTTEGARO N ... 194, 566  
 BRLEK-GORSKI D ... 233  
 BRTKOVA A ... 97  
 BRUSSOW KP ... 154, 512  
 BUJDAKOVA H ... 97  
 BUKOWSKA D ... 154, 512  
 CAVIEDES-VIDAL E ... 383  
 CECH S ... 10, 504  
 CERIBASI S ... 619  
 CERQUETELLA M ... 561  
 CHANG D ... 253  
 CHANG S-K ... 172  
 CHEDIACK JG ... 383  
 CHENG C-H ... 172  
 CHO Y ... 603  
 CHOE B-Y ... 125  
 CHOI C-B ... 125  
 CHOI SH ... 253  
 CHOMDEJ S ... 551  
 CHROMA M ... 119  
 CHROSCZCZ A ... 331  
 CIBICEK N ... 610  
 CID FD ... 383  
 CINAROGLU S ... 389  
 COX E ... 359  
 COZ-RAKOVAC R ... 233  
 CRNOGAJ M ... 163  
 DE MIGUEL R ... 422  
 DIEZ E ... 399  
 DOBESOVA O ... 187  
 DOLEZEL R ... 10, 504  
 DOMINGUEZ L ... 297  
 DRAHOVSKA H ... 97  
 DU S-J ... 172  
 DUCHATEAU L ... 318  
 DUDEK A ... 242  
 DURAS GOMERCIC M ... 30  
 DURMUS AS ... 619  
 DUZLER A ... 79  
 DVORAK M ... 523  
 DVORAKOVA M ... 523  
 DZIDARA P ... 233  
 DZIECIOL M ... 285  
 EHRMANN J ... 610  
 EKERT KABALIN A ... 394  
 EL-KHODERY S ... 113  
 ESCRIBANO BM ... 422  
 ESTEPA JC ... 281, 399  
 ETTLOVA A ... 369  
 FABIS M ... 331  
 FASULO SV ... 383  
 FEI ACY ... 172  
 FICHTELOVA V ... 106  
 FICTUM P ... 339, 348, 409  
 FILIPOVA M ... 97  
 FRGELECOVA L ... 348  
 FRUK T ... 30  
 GALOV A ... 30  
 GARCIA ME ... 297

- GODDEERIS BM ... 359  
GOEDDE T ... 289  
GOMERCIC H ... 30  
GOMERCIC T ... 30, 353  
GONZALEZ-LANZA C ... 19  
GOOSSENS L ... 483  
GORCZYKOWSKI M ... 264  
GREGOR Z ... 523  
GRILEC D ... 457  
GRIZELJ J ... 394  
GRYM M ... 339  
GRYMOVA V ... 339
- HABUS J ... 294  
HAESEBROUCK F ... 318  
HAILAT NQ ... 590  
HAJIMOHAMMADI A ... 311  
HALIGUR A ... 79  
HALOZKA R ... 339  
HANANEH W ... 590  
HAUPTMAN K ... 409  
HENKLEWSKI R ... 285  
HERMANNS W ... 289  
HERMANOVA M ... 409  
HOLY L ... 10  
HORVATHOVA A ... 1, 55  
HOUSZKA M ... 264  
HRICOVA K ... 119  
HRUSKA K ... 43, 473, 571, 625  
HUBER D ... 353  
HULINKA P ... 429
- ISHII M ... 113
- JACKOWSKA M ... 154, 512  
JADAN M ... 233  
JAHN P ... 187  
JAHNG G-H ... 125  
JANECZEK M ... 331  
JASKOWSKI JM ... 154, 512  
JATKAUSKAS J ... 494  
JEKL V ... 409  
JENSEN JC ... 318  
JESETA M ... 429  
JI JR ... 275  
JOURQUIN J ... 483
- KABES R ... 445  
KACANIOVA M ... 377  
KAEVSKA M ... 43, 325, 348, 473, 571  
KANORA A ... 483  
KEMPISTY B ... 154, 512
- KETTUNEN H ... 71  
KHOL JL ... 225  
KIM G ... 253  
KIM HC ... 275  
KIM H-Y ... 125  
KIM J ... 603  
KIM JH ... 253  
KIM JM ... 253  
KIM M ... 603  
KIM N ... 603  
KIM NS ... 275  
KIM S-Y ... 125  
KIS I ... 163
- KNOTEK Z ... 91, 409  
KNOTKOVA Z ... 91  
KOHOLOTOVA L ... 504  
KOLAR M ... 119  
KOS J ... 194  
KOS J ... 566  
KOUKALOVA D ... 119  
KOVARCIK K ... 106  
KOZACINSKI L ... 233  
KOZDROWSKI R ... 285  
KRALIK P ... 225, 325  
KRALOVA A ... 87  
KRAMETTER-FROETSCHER R ... 145  
KRISOVA S ... 445  
KRIZ P ... 87, 348  
KRIZOVA K ... 55, 87  
KRONTORAD P ... 10  
KUBOVICOVA E ... 581  
KUCER N ... 163  
KUMAR P ... 631  
KUO H-C ... 172  
KUSAK J ... 353
- LAFI S ... 590  
LALOVA H ... 10  
LAMKA J ... 625  
LANTERI G ... 35  
LAUS F ... 561  
LAUWERS L ... 483  
LEE D-W ... 125  
LEE H ... 603  
LEE K ... 603  
LEE S-H ... 125  
LEW M ... 137  
LEW S ... 137  
LEXMAULOVA L ... 523  
LIANERI M ... 154, 512  
LOPATAROVA M ... 10  
LOPEZ M ... 399

- LOPRETE G ... 303  
 LORA AJ ... 336
- MACHATKOVA M ... 429  
 MACRI F ... 35  
 MADHU BP ... 631  
 MAES D ... 318  
 MAKAREVICH AV ... 581  
 MANGA-GONZALEZ MY ... 19  
 MARTECIKOVA S ... 429  
 MARTINEZ-NEVADO E ... 297  
 MARTINKOVIC K ... 294  
 MASON N ... 145  
 MATEOS A ... 297  
 MATICIC D ... 353  
 MATIJATKO V ... 163  
 MATLOVA L ... 55  
 MATOS F ... 133  
 MATSUI M ... 113  
 MAZZULLO G ... 35  
 MEKCHAY S ... 551  
 MENDEZ J ... 336  
 MENDOZA FJ ... 281, 399  
 METEKIA AS ... 590  
 MIKLICOVA Z ... 331  
 MILAS Z ... 294  
 MINAMBRES B ... 19  
 MISTA D ... 264  
 MIYAKE Y ... 113  
 MOESTL K ... 145  
 MOLINA AM ... 336  
 MONTILLA P ... 422  
 MORAVKOVA M ... 1, 55, 87, 91  
 MOSTAGHNI K ... 311  
 MOYANO MR ... 336  
 MRLIK V ... 87, 91, 369  
 MRLJAK V ... 163
- NAM J-W ... 125  
 NANJIANI IA ... 318  
 NECAS A ... 438  
 NGANVONGPANIT K ... 551
- OCHOA P ... 19  
 ONG-CHAI S ... 551  
 OSTOVIC M ... 394  
 OUWEHAND AC ... 71
- PAGGI E ... 561  
 PALENIK T ... 504  
 PALIKOVA I ... 610  
 PARK BK ... 275
- PARK J ... 253  
 PARK S ... 253  
 PARZEFALL B ... 289  
 PASMANS F ... 318  
 PATSCHOVA M ... 445  
 PAVICIC Z ... 394  
 PAVLIK A ... 429  
 PAVLIK I ... 1, 55, 87, 91, 199, 225, 325, 339, 348, 369, 625  
 PAWAIYA RVS ... 631  
 PEREZ-ECIJA A ... 281, 399  
 PERILLO L ... 35  
 PETLEVSKI R ... 163  
 PETRINEC Z ... 457  
 PEURANEN S ... 71  
 PIEKARSKA J ... 264  
 PIOTROWSKA H ... 512  
 PIRKIC B ... 566  
 PIVKO J ... 581  
 POMIANOWSKI A ... 39  
 POTACHAROEN P ... 551  
 POURJAFAR M ... 311  
 PRIBYLOVA R ... 625  
 PROKS P ... 438
- QUIROZ-ROMERO H ... 19
- RADISIC B ... 353  
 RAJCHARD J ... 413  
 RAPISARDA G ... 35  
 RAUSER P ... 438, 523  
 RAUTONEN N ... 71  
 RECKOVA Z ... 429  
 REQUENA F ... 422  
 ROETZEL J ... 145  
 ROTKIEWICZ T ... 547  
 ROZICKA A ... 137  
 RUBIO MD ... 422  
 RUEDA A ... 336  
 RYU K-N ... 125
- SACER I ... 163  
 SAUER P ... 119  
 SCHULZE H ... 71  
 SEN A ... 463  
 SERIN G ... 405  
 SFACTERIA A ... 35  
 SHITAYE JE ... 339  
 SIENGDEE P ... 551  
 SIENKIEWICZ W ... 242  
 SIM C ... 275  
 SIMANEK V ... 610  
 SINDICIC M ... 353

- SIROTKIN AV ... 377, 581  
SKORIC M ... 91, 339, 348, 409  
SLAMOVA R ... 199  
SLANA I ... 55, 87, 325, 348, 369, 625  
SLANY M ... 91, 339, 369  
SLAVICA A ... 353  
SMOLEC O ... 194, 566  
SON J ... 253  
SOYGUDER Z ... 389  
SPATERNA A ... 561  
SPAZIANTE D ... 561  
SPINELLA G ... 303  
SRNEC R ... 438  
STABEL JR ... 590  
STAFFA R ... 523  
STARESINA V ... 294  
STEGER A ... 289  
STEHLIK L ... 438  
STEJSKAL M ... 194  
STEVANOVIC V ... 294  
STOKOVIC I ... 163  
STOSOVA T ... 119  
STRITOF Z ... 294  
STRUNJAK-PEROVIC I ... 233  
SVOBODOVA J ... 91, 339, 369
- TAMBURRO R ... 303  
TESEI B ... 561  
TIIHONEN K ... 71  
TLAK GAJGER I ... 457  
TOFANT A ... 394  
TOPIC POPOVIC N ... 233  
TORTI M ... 163  
TOVAR P ... 422  
TRBOJEVIC VUKICEVIC T ... 30  
TRCKOVA M ... 199, 225  
TUNCA R ... 405  
TUNEZ I ... 422  
TURK N ... 294
- ULRICHHOVA J ... 610  
UYAMA T ... 113
- VACEK J ... 610  
VALENTINI S ... 303  
VAN DEN BROECK W ... 359  
VAN HUYLENBROECK G ... 483  
VAN MEENSEL J ... 483  
VANROMPAY D ... 359  
VAVROUCHOVA E ... 187  
VECERA R ... 610  
VERDONCK F ... 359  
VILAR JM ... 303  
VILLARREAL I ... 318  
VLASIN M ... 523  
VNUK D ... 194, 353, 566  
VONDRAŠKOVA H ... 199  
VOSTALOVA J ... 610  
VRANCKX K ... 318  
VRBKOVÁ J ... 610  
VROTNIAKIENE V ... 494  
VRUBLOVA E ... 610  
VUGREK O ... 457  
VYSKOCIL M ... 504
- WEI H-W ... 172  
WOLF S ... 394  
Woo D-C ... 125  
WOZNA M ... 154, 512
- YAMAKAWA K ... 113  
YAMAN I ... 619  
YAMAN M ... 619  
YAYGINGUL R ... 405
- ZAWADZKI W ... 264  
ZOBEL R ... 194  
ZRALY Z ... 199

## AUTHOR INSTITUTION INDEX

### Argentina

- Institute for Multidisciplinary Research in Biology (IMIBIO-SL), San Luis ..... 383  
Universidad Nacional de San Luis, San Luis ..... 383

### Austria

- Institute for Veterinary Disease Control, Moedling ..... 145  
University of Veterinary Medicine, Vienna ..... 91, 145, 225

### Belgium

- Catholic University, Leuven ..... 359  
Ghent University, Merelbeke ..... 318, 359, 483  
Institute for Agricultural and Fisheries Research (ILVO), Merelbeke ..... 483  
Janssen Animal Health Beerse ..... 483  
Molbergem 65, B-9630 Zwalm ..... 483

### Croatia

- Croatian National Institute of Public Health, Zagreb ..... 233  
Institute Rudjer Boskovic, Zagreb ..... 233, 457  
Rovisce Pig-Breeding Farm, Ltd., Rovisce ..... 394  
University of Zagreb, Zagreb ..... 30, 163, 194, 233, 294, 353, 394, 457, 566  
Veterinary Practice, Struzec ..... 194  
Veterinary Station of the City of Zagreb, Zagreb ..... 163  
Veterinary Station of Varazdin, Varazdin ..... 30

### Czech Republic

- BioPlus, s.r.o., Brno ..... 369  
BOVET Company, Sloupnice ..... 10  
Charles University in Prague, Faculty of Pharmacy, Hradec Kralove ..... 625  
Masaryk University, Brno ..... 409, 429, 523  
Palacky University, Olomouc ..... 119, 610  
PLEBO CZ Company, Rajhrad ..... 429  
Regional Institute of Public Health, Brno ..... 91, 339, 369  
St. Anne's University Hospital, Brno ..... 409, 523  
State Veterinary Institute, Olomouc ..... 119  
University Hospital, Brno ..... 523  
University of South Bohemia, Ceske Budejovice ..... 413  
University of Veterinary and Pharmaceutical Sciences, Brno ..... 10, 91, 187, 339, 348, 409, 438, 445, 504, 523  
Veterinary Clinic AvetuM, Brno ..... 339  
Veterinary Research Institute, Brno ..... 1, 43, 55, 87, 91, 106, 199, 225, 325, 339, 348, 369, 429, 473, 571, 625

### Denmark

- Orion Pharma Animal Health, Niva ..... 318

**Egypt**

Mansoura University, Mansoura ..... 113

**Finland**

Danisco Finland, Kantvik ..... 71

**Germany**

FBN Research Institute for the Biology of Farm Animals, Dummerstorf ..... 512

Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf ..... 154

Ludwig-Maximilians-University Munich, Munich ..... 289

Small Animal Referral Practice Staufenbeck, Piding ..... 289

**India**

Indian Veterinary Research Institute, Bareilly ..... 631

**Iran**

Shiraz University, Shiraz ..... 311

**Italy**

University of Bologna, Bologna ..... 303

University of Camerino, Camerino ..... 561

University of Catanzaro, Catanzaro ..... 303

University of Messina, Messina ..... 35

**Japan**

Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido ..... 113

**Jordan**

Jordan University of Science and Technology, Irbid ..... 590

**Lithuania**

Institute of Animal Science of Lithuanian Veterinary Academy, Baisogala ..... 494

**Mexico**

Autonomous National University of Mexico (UNAM), University City, Mexico ..... 19

**Poland**

University of Life Sciences, Poznan ..... 154, 512

University of Medical Sciences, Poznan ..... 154, 512

University of Warmia and Mazury, Olsztyn ..... 39, 137, 242, 547

Wroclaw University of Environmental and Life Sciences, Wroclaw ..... 242, 264, 285, 331

**Portugal**

INRB, IP-LNIV, Animal Health Unit, Bacteriology Laboratory, Lisboa ..... 133

**Republic of Korea**

Catholic University of Korea, Seoul ..... 125

Chonbuk National University, Jeonju ..... 275, 603

Chungbuk National University, Cheongju ..... 253

Chungnam National University, Daejeon ..... 275

Daegu Health College, Daegu .....	603
Kangwon National University, Chuncheon .....	275
Konkuk University, Seoul .....	125
Kyung-Hee University, Seoul .....	125
Paek Kwang C&S Co. LTD, Sehyun-dong Bundang-gu Sungnam City .....	275
Research Institute of Veterinary Science, Daejeon .....	275
<b>Slovak Republic</b>	
Animal Production Research Centre, Nitra .....	377, 581
Comenius University, Bratislava .....	97
Institute of Archaeology, Slovak Academy of Sciences, Nitra .....	331
Private Veterinary Surgeon, Nitra .....	331
State Veterinary and Food Institute, Dolny Kubin .....	97
University of Agriculture, Nitra .....	377
<b>Spain</b>	
Institute of Mountain Livestock (CSIC-ULE), Spanish National Research Council (CSIC), Grulleros, Leon .....	19
Universidad Complutense de Madrid, Madrid .....	297
Zoo-Aquarium, Madrid .....	297
Universidad de Las Palmas de Gran Canaria .....	303
University of Cordoba, Cordoba .....	281, 336, 399, 422
<b>Taiwan</b>	
National Chiayi University, Chiayi .....	172
National Taiwan University, Taipei .....	172
<b>Thailand</b>	
Chiang Mai University, Chiang Mai .....	551
<b>The Netherlands</b>	
Danisco Animal Nutrition, Leiden .....	71
<b>Turkey</b>	
Adnan Menderes University, Aydin .....	405
Erciyes University, Kayseri .....	79
Mehmet Akif Ersoy University, Burdur .....	79
Pamukkale University, Denizli .....	463
University of Firat, Elazig .....	183, 619
University of Yuzuncu Yil, Van .....	259, 389
<b>United Kingdom</b>	
Pfizer-Sandwich, Kent .....	318
<b>USA</b>	
Baylor University, Waco, Texas .....	275
USDA-ARS, National Animal Disease Centre, Ames, Iowa .....	590
In 2010, the journal Veterinarni Medicina published 50 original papers, 4 review articles, 27 case reports, written by 358 authors from 87 institutions of 27 countries.	

## LIST OF REVIEWERS

### Acknowledgement of the reviewers

There is no possibility of publishing a scientific journal without the invaluable help of reviewers. They assess the novelty of results and interpret them in the correct light, they teach hundreds of people for whom they usually remain unknown for ever. The great help of Neysan Donnelly of the National University of Ireland, Galway, in language revision of nearly all published papers is also acknowledged. The following 187 experts (42 from the United States, 19 from Germany, 13 from the United Kingdom, 9 from France, and 104 from another 28 countries) accepted our invitation to review manuscripts in 2010 and have contributed enormously to maintaining the standard of the journal. Both authors and editors are very grateful to the following colleagues:

Abramson DH, New York, USA	Cloud JL, Salt Lake City, USA
Allen VG, Lubbock, USA	Coelli T, Brisbane, Australia
Anthony P. Russell, Calgary, Canada	Collins MT, Madison, USA
Appelberg R, Porto, Portugal	Contreras-Rodriguez A, Mexico City, Mexico
Aranaz A, Madrid, Spain	Cornel KK, Athens, USA
Arieli A, Rehovot, Israel	Craig P, Salford, UK
Austin B, Edinburgh, UK	Dean M, Frederick, USA
Aydin S, Elazig, Turkey	Degen GH, Dortmund, Germany
Baiao NC, Belo Horizonta, Brazil	Edwards JL, Knoxville, USA
Bakker D, Lelystad, The Netherlands	Egyed L, Budapest, Hungary
Bannerman DD, Beltsville, USA	Elzer PH, Baton Rouge, USA
Bauer C, Giessen, Germany	Eric Cox, Merelbeke, Belgium
Bechrakis NE, Innsbruck, Austria	Faldyna M, Brno, Czech Republic
Beilage EG, Hannover, Germany	Falkinham JO, Blacksburg, USA
Belak S, Uppsala, Sweden	Fasanella A, Foggia, Italy
Besier RB, Albany, Australia	Ferroglio E, Turin, Italy
Bettschart-Wolfensberger R, Zurich, Switzerland	Flachowsky G, Braunschweig, Germany
Blackall PJ, Yeerongpilly, Australia	Fleming RH, Edinburgh, UK
Blixenkrone-Møller M, Copenhagen, Denmark	Fodor L, Budapest, Hungary
Bloom SR, London, UK	Fossum TW, College Station, USA
Boettger EC, Zurich, Switzerland	Franek M, Brno, Czech Republic
Bomba A, Kosice, Slovak Republic	Freeman DE, Gainesville, USA
Bosi P, Bologna, Italy	Friedrich K, Rome, Italy
Botti M, Parma, Italy	Fuchs KH, Frankfurt, Germany
Bougnoux MP, Tours, France	Gan HT, Chengdu, China
Boyle SM, Blacksburg, USA	Garcia-Perez AL, Bizkaia, Spain
Bradley A. Mullens, Riverside, USA	Geysen D, Antwerpen, The Netherlands
Breitbart H, Ramat-Gan, Israel	Gill CO, Alberta, Canada
Breves G, Hannover, Germany	Golsteyn-Thomas EJ, Alberta, Canada
Bruckmaier RM, Freising-Weihenstephan, Germany	Guzylack L, Toulouse, France
Brugge WR, Boston, USA	Harvey R, Ames, USA
Burvenich C, Merelbeke, Belgium	Hermon-Taylor J, London, UK

---

Hewicker-Trautwein M, Hannover, Germany	Moreto M, Barcelona, Spain
Hill M, Prague, Czech Republic	Motlik J, Libechov, Czech Republic
Hoop RK, Zurich, Switzerland	Murray TG, Miami, USA
Horky D, Philadelphia, USA	Nagy B, Budapest, Hungary
Houpt KA, Ithaca, USA	Nordmann P, Bicetre, France
Hruska K, Brno, Czech Republic	Notermans SHW, Bilthoven, The Netherland
Hulse D, College Station, USA	Nyman G, Skara, Sweden
Huszenicza G, Budapest, Hungary	O'Brien J, San Francisco, USA
Hutchings MR, Penicuik, UK	Ogilvie G, San Marcos, USA
Chai JY, Seoul, Republic of Korea	O'Keefe M, Dublin, Ireland
Chantada GL, Buenos Aires, Argentina	Oswald I, Toulouse, France
Jane KA Cook, Huntingdon, UK	Paape MJ, Ghent, Belgium
Jergens AE, Ames, USA	Paik IK, Ansung, Republic of Korea
Jones CJ, Lincoln, USA	Panserat S, Saint-Pee-sur-Nivelle, France
Joshi SC, Jaipur, India	Papich MG, Raleigh, USA
Juste RA, Bizkaia, Spain	Paredes-Sabja D, Corvallis, USA
Kalous J, Libechov, Czech Republic	Parrish NM, Baltimore, USA
Kanitz W, Dummerstorf, Germany	Pavlik I, Brno, Czech Republic
Kazda J, Borstel, Germany	Pejsak Z, Pulawy, Poland
Kim H-Y, Busan, Republic of Korea	Peterhans E, Bern, Switzerland
Kirschvink N, Namur, Belgium	Petkevicius S, Kaunas, Lithuania
Koh WJ, Seoul, Republic of Korea	Podgorska K, Pulawy, Poland
Kolar M, Olomouc, Czech Republic	Rahman MM, Jeonju, Republic of Korea
Kotwica J, Olsztyn, Poland	Rath D, Neustadt, Germany
Kovarcik K, Brno, Czech Republic	Ratky J, Herceghalom, Hungary
Kralinger M, Innsbruck, Austria	Rawlings CA, Athens, USA
La Ragione R, Addlestone, UK	Reddacliff L, Camden, Australia
Lalles JP, Saint-Gilles, France	Reperant JM, Ploufragan, France
Lamka J, Hradec Kralove, Czech Republic	Roberts-Thomson IC, Adelaide, Australia
Langmann G, Graz, Austria	Rocken M, Stanberg, Germany
Le Gall M, Rennes, France	Roepstorff AK, Copenhagen, Denmark
Leisewitz AL, Ondersoort, South Africa	Rogan MT, Salford, UK
Lepage O, Lyon, France	Rowe MT, Belfast, UK
Leppla SH, Bethesda, USA	Rubes J, Brno, Czech Republic
Maes D, Ghent, Belgium	Rychlik I, Brno, Czech Republic
Majewski M, Olsztyn, Poland	Rziha HJ, Tubingen, Germany
Makarevich AV, Nitra, Slovak Republic	Sangild PT, Copenhagen, Denmark
Malik JK, Uttar Pradesh, India	Sarker MR, Corvallis, USA
Manning EJB, Madison, USA	Segales J, Barcelona, Spain
Marounek M, Prague, Czech Republic	Sevilla I, Derio, Spain
Meyer UA, Basel, Switzerland	Sgarbieri VC, Campinas, Brazil
Meyer-Lindenberg A, Hannover, Germany	Sheldon IM, Swansea, UK
Mezerova J, Hermanuv Mestec, Czech Republic	Shulaw WP, Columbus, USA
Moallem U, Bet-Dagan, Israel	Schams D, Munich, Germany
Moebius P, Jena, Germany	Schettters TP, Boxmeer, The Netherlands

Schwarz S, Neustadt-Mariensee, Germany	Traversa D, Teramo, Italy
Sibila M, Barcelona, Spain	Truszcynski M, Pulawy, Poland
Smith T, Guelph, Canada	Tsai H-J, Taipei, Taiwan
Solti L, Budapest, Hungary	Une Y, Fuchinobe, Japan
Songer JG, Tucson, USA	Varga GA, Pennsylvania, USA
Sorenmo K, Philadelphia, USA	Vilcek S, Kosice, Slovak Republic
Stabel JH, Ames, USA	Von Euler H, Uppsala, Sweden
Stadejek T, Pulawy, Poland	Vos AD, Rosslau, Germany
Steagall P, Madison, USA	Voss A, Rosslau, Germany
Stephan R, Zurich, Switzerland	Waller PJ, Uppsala, Sweden
Stevenson K, Penicuik, UK	Wendt EL, Madison, USA
Sykes JE, Davis, USA	Whittington RJ, Sydney, Australia
Teixeira MMG, Sao Paolo, Brazil	Wiltbank MC, Madison, USA
Thacker E, Beltsville, USA	Wu G, College Station, USA
Tocher DR, Stirling, Scotland	Zhu XP, Beijing, China
Toranzo AE, Santiago de Compostela, Spain	Zinsstag J, Basel, Switzerland