

RICERCHE EFFETTUATE

ARGOMENTI VARI

Alpigiani I, Keeling LJ, Salman MD, Brindani F, Bacci C, Pongolini S, Bonardi S

Animal-based welfare indicators and their association with food safety indicators in finishing pigs in Northern Italy : a pilot study

Science in the Service of Animal Welfare : priorities around the world : UFAW International Animal Welfare Science Symposium : 4-5th July 2013, Barcellona, Spain / [s.l. : s.n., 2013]. - 1 p. [Nr. Estr. 5705]

UFAW International Animal Welfare Science Symposium : Barcellona, Spain : 4-5th July 2013)

Animal welfare is an increasingly sensitive issue for the competent authorities called to implement European legislation. Yet animal welfare, a relevant part of the requirements of the Hygiene Package, is usually dealt with on its own and only rarely connected to food safety hazards. The ultimate purpose of this study is to determine the association between specific animal-based welfare measures with the occurrence of *Salmonella* spp. and *Yersinia enterocolitica* as indicators of food safety in finishing pigs at slaughter plants in Northern Italy. Collection of animal, resource and management-based measures was carried out on farm for 30 selected slaughter batches from one to three days before slaughter, totalling 3749 pigs. Welfare assessments were according to the Welfare Quality® protocols, where welfare measures scores of 0 and 2 indicate higher and lower animal welfare, respectively. The batches were tested for *Salmonella* spp. and *E. enterocolitica* by environmental faecal sampling on farm and a representative sample of five individuals (in all n=150), slaughtered at approximately 167.0 Kg, were tested for these pathogens in the mesenteric lymph nodes and tonsils, respectively. Five individuals per batch were also inspected for gross pathology at slaughter. Pigs came from intensive (n= 22), organic (n=4) and semi free range (n= 4) farms. All male pigs were castrated and all, except pigs from one semi free range farm, were tail docked. Enrichment material was only present in the organic and semi free range farms. The sum of positive batches to pen welfare measures were analysed by individual logistic regression against the sum of the *Salmonella* spp. and *Y. enterocolitica* positive batches. Panic response to humans, pleuritis, pericarditis, space allowance (0.3-0.9 m²/100 Kg), mortality (2.6-4.5%), slatted floor, absence of enrichment material and absence of outdoor access all tended to be associated to *Y. enterocolitica*. White spot liver tended to be associated to *Salmonella* spp. Although the study did not demonstrate the significant associations, the design can be considered as practical approach to explore the relationship between animal welfare issues and food safety indicators; considering the sample size of the study in fact we concluded that further research is needed to confirm that the sample population could influence the statistical analysis and could lead to significant results. The link between animal welfare and health and, by implication, food safety needs to be tested in a larger study to support stakeholders and risk managers in accurate policy-making.

Armas F, Boniotti MB, Pacciarini ML, Mazzone P, Di Marco V, Marianelli C

Resazurin microtitre assay per lo screening rapido dell'antibiotico resistenza nel *Mycobacterium bovis*

XV Congresso Nazionale SIDiLV : 23 - 25 Ottobre 2013, Monreale (PA) : volume degli atti / a cura di Santo Caracappa ... [et al.]. - [s.l. : Societa' Italiana Diagnostica di Laboratorio Veterinaria (SIDiLV), 2013]. - p 119-121. - 6 bib ref [Nr. Estr. 5543]

Congresso Nazionale Societa' Italiana Diagnostica di Laboratorio Veterinaria (SIDiLV) (15. : Monreale (PA) : 23 - 25 Ottobre 2013)

In this study 51 Mycobacterium bovis isolates were tested against six standard antibiotics (isoniazid, ethambutol, rifampicin, streptomycin, kanamycin and pyrazinamide) by the gold standard proportion method (PM) on Middlebrook medium and the resazurin microtitre assay (REMA). Two breakpoint drug concentrations defining drug susceptibility and resistance, respectively, were chosen for each drug and tested against all isolates in REMA. Results were compared to PM. Both tests provided

susceptibility results to standard firstline drugs but pyrazinamide. Nucleotide sequencing detected pncA codon 57 mutation in all isolates. The embB nucleotide sequence analysis revealed nucleotide polymorphisms. We do not found any association between embB mutations and ethambutol resistance. Our results confirm REMA as a rapid and inexpensive method for testing the mycobacterial drug susceptibility against the key anti-tuberculosis drugs.

Arrigoni°N, Ricchi°M, Panella G, Cammi°G, De_Cicco°C, Savi°R, Cerutti°G, Mazzone P

Sopravvivenza di Mycobacterium avium subsp. paratuberculosis (Map) nel digestato in uscita da un impianto per la produzione di biogas = Survival of Mycobacterium avium subsp. paratuberculosis (Map) in products of digestion from a biogas plant

Buiatria. - Vol. 8 no 2 (2013). - p 5-12. - 14 bib ref [Nr. Estr. 5323]

Congresso Nazionale Società Italiana di Buiatria (XLV : Piacenza : 2013)

Scopo dello studio è valutare la sopravvivenza di Mycobacterium avium subsp. paratuberculosis (Map) ai trattamenti di digestione anaerobica applicati in un impianto per la produzione di biogas operante in mesofilia, alimentato in continuo con reflui di un allevamento di bovine da latte a media prevalenza di paratubercolosi. Nel corso dei 6 mesi di studio, l'esame colturale, effettuato con frequenza settimanale, ha evidenziato la presenza di Map nella prevasca (22/28 campioni positivi, pari al 78.6%) e nel digestore (14/28 campioni positivi, pari al 50.0%). I risultati dello studio mostrano come la concentrazione di Map diminuisca dalla prevasca al digestore di meno di un log10, per il probabile effetto inattivante della digestione anaerobica, associata all'effetto di diluizione della massa inoculata all'interno di quella già presente nel digestore. La presenza di Map è stata inoltre rilevata, seppure in una sola occasione, nel separato solido in uscita dal digestore (1/13 campioni positivi, pari al 7.7%). In relazione ai dati osservati non è possibile escludere la contaminazione dei foraggi con il prodotto del digestato in uscita da un impianto per la produzione di biogas con le caratteristiche descritte, qualora utilizzato per la fertirrigazione.

In this study we evaluated the survival of Mycobacterium avium subsp. paratuberculosis (Map) to the anaerobic digestion in a plant for the production of biogas, operating under mesophilic conditions. The plant was continuously fed with effluents from a dairy herd, moderately affected by paratuberculosis. During the 6-month study period, sampling, carried out on a weekly basis, revealed the presence of Map by culture in the sump (22/28 positive samples: 78.6%) and in the digester (14/28 positive samples: 50.0%). The results of the study show a decrease of Map concentration from the sump to the digester of less than 1 log10; this is probably due to the combined effect of Map inactivation by anaerobic digestion, coupled with the effect of dilution of the inoculated mass in the digester. The presence of Map was also occasionally detected in the solid separated out of the digester (1/13 positive samples: 7.7%). Our data showed it is not possible to exclude contamination of fodder fertilized with the products of biogas plants with the characteristics described.

Baratto C, Boniotti°B, Ariani P, Papetti°A, Dall'Olio R, Gagliazzo L, Mutinelli F, Granato A

Development a specific one step real time RT-PCR for detection and quantification of deformed wing virus and acute bee paralysis virus in honey bees

Apimondia XXXIII International Apicultural Congress : 29 September - 04 October 2013 Kyiv / [Kyiv : s.n., 2013]. - 1 p. [Nr. Estr. 5864]

"Apimondia" International Apicultural Congress (43rd : Kyiv : 29 September - 04 October 2013)

Calzolari°M, Albieri A

Could drought conditions trigger Schmallenberg virus and other arboviruses circulation?

Int J Health Geogr. - Vol. 12 (2013). - no. 7 (5 p). - 36 bib ref [Nr. Estr. 5273]

In 2011, a new orthobunyavirus, named the Schmallenberg virus (SBV), was discovered in Europe. Like the related Shamonda virus, SBV is an arbovirus (arthropod-borne virus). After its discovery, the virus was detected in a wide area in north-western Europe, an unexpected finding in a territory where climatic conditions would not seem ideal for arbovirus transmission. This sudden expansion suggests the effect of 2011 drought as a key factor that may have triggered SBV circulation. The possible influence of drought, recorded in north-western Europe in early 2011, on virus circulation was evaluated. Methods and results: The locations of SBV detections in Europe until April 2012 were obtained, and area of virus circulation was evaluated by kernel density estimation. Precipitation data in SBV circulation area, summarized by the 3 month precipitation indexes of May, were compared with precipitation data outside that area, confirming driest conditions in that area. Conclusions The onset of drought conditions recorded in the SBV detection area in early 2011 may have promoted the circulation of this virus. A correlation between circulation of some arboviruses and drought has been reported elsewhere. This was mainly explained by an effect of water deficit on the environment, which altered the relationships between vectors and reservoirs, but this correlation might be also the result of unknown effects of drought on the vectors. The effect of drought conditions on arbovirus circulation is most likely underestimated and should be considered, since it could promote expansion of arboviruses into new areas in a global warming scenario.

Calzolari^oM, Montarsi F, Bonilauri^oP, Ravagnan S, Bellini R, Russo F, Dottori^oM, Palei M, Angelini P, Capelli G

Arboviruses surveillance by mosquito screening in North-Eastern Italy in 2012 and 2013

7th Annual Meeting Epizone "Nothing permanent, except change" : 1-4 October 2013, Brussels : abstracts / [s.l. : s. n., 2013]. - p 62 [Nr. Estr. 5428]

Annual meeting Epizone (7th : Brussels : 1-4 October 2013)

West Nile virus (WNV) is an arbovirus circulating between mosquitoes and wild birds, which can affect human beings and horses as dead-end hosts. Human cases of West Nile neuroinvasive disease are increasingly reported in recent years in Europe, included Italy. Since 2008, to survey the circulation of WNV similar surveillance systems, including mosquito monitoring, were set in Emilia-Romagna (ER), in Veneto (VEN) and Friuli Venezia Giulia (FVG) regions; these three regions cover about 50 thousands km² in the North-East of Italy. Since 2009, both systems recorded the circulation of Usutu virus (USUV), a flavivirus closely related to WNV with a not yet defined pathogenic capacity. These mosquito-based surveillances include the collection of insects by attractive traps (especially carbon dioxide baited traps) in fixed stations every two weeks from May to October. Mosquitoes are grouped according to species, place and date of sampling, ground in pools (with a maximum of 50 or 200 specimens) and submitted to genus (pan-flavivirus) and species specific (USUV and WNV) molecular analysis. In 2012 a total of 340,484 mosquitoes were tested in the three regions, 221,722 in ER (1,861 pools sampled in 96 traps) and 118,762 in VEN/FVG (1976 pools in 35 traps). In 2013, to August 8, 439,033 mosquitoes were tested, 160,730 in ER (1458 pools in 88 traps) and 278,303 in VEN/FVG (3719 pools in 54 traps). Composition of mosquito populations sampled were similar in the two surveys, in 2012 season, the most abundant species was *Culex pipiens* (86.1 % in ER, 75.1 % in VEN/FVG) followed by *Aedes (Ochlerotatus) caspius* (10.4 % in ER, 12.8 % in VEN /FVG) and *Aedes vexans* (2.2 % in ER, 1.8 % in VEN/FVG); a relevant number of *Aedes (Stegomyia) albopictus* specimens were also tested (0.7 % in ER, 1.3 % in VEN/FVG). In 2012 WNV was detected in 11 pools in VEN and in two pools in FVG but was undetected in ER; conversely in 2013, to August 8, WNV was detected in 64 pools in ER and in 24 pools in VEN. USUV was detected in both plans in the two years of surveillance (128 pools in ER and 86 pools in VEN/FVG). Both viruses were mostly detected in *Cx. pipiens*. In 2012, the overall season minimum infection rate (MIR) for USUV in *Cx. pipiens* was similar in the two surveys (0.41 ‰ in ER and 0.38 ‰ in VEN/FVG). Interestingly USUV was detected also in *Ae. caspius* (three pools) and *Ae. albopictus* (two pools) species, but further data are needed to elucidate the possible vector role of these species. Utilization of pan-flavivirus PCR also allowed the detection of sequences referable to viruses specific of mosquitoes (Mosquito-only flavivirus), among these *Aedes* flavivirus was detected in 58 pools of *Ae. albopictus* (and in three of *Cx. pipiens*) and *Ochlerotatus flavivirus*

was detected in 12 pools of *Ae. caspius* (2012 data). These results confirm the ability of mosquito based surveillances to detect nontarget viruses, by using the genus-PCRs. The detection in 2012 of WNV in VEN/FVG and the inactivity of the virus in ER in the same year raise the question of which factors may allow, or prevent, WNV circulation in neighbouring and similar areas; while the massive circulation of WNV recorded in 2013 in both VEN and ER highlights the importance of identifying drivers that could trigger viral circulation. Obtained results show a good performance of the two systems in term of sensitivity and precocity in detecting the viral circulation, confirming that, if mosquito trapping effort is intensive, these systems are useful and reliable in terms of assisting the planning of public health policies.

Carra°E, Morganti°M, Corpus°F, Scaltriti°E, Bergamo°F, Pongolini°S

Diversity of human *Salmonella Typhimurium* and *Salmonella enterica* 4,[5],12:i- strains isolated in Emilia Romagna Region, Italy

Salmonella and *Salmonellosis* : abstract book : 27-28-29 May 2013 Saint-Malo, France / [s.l. : s.n., 2013]. - p 435-436. - 6 bib ref [Nr. Estr. 5635]

International Symposium *Salmonella* and *Salmonellosis* : Saint-Malo, France : 27-28-29 May 2013)

Defilippo°F, Bonilauri°P, Dottori°M

Effect of temperature on six different developmental landmarks within the pupal stage of the forensically important blowfly *Calliphora vicina* (Robineau-Desvoidy) (Diptera: Calliphoridae)

J Forensic Sci. - Vol. 58 n 6 (2013). - p 1554-1557. - 23 ref bib [Nr. Estr. 5518]

This study investigates the pupal development times of the blow fly *Calliphora vicina*, which were studied in the laboratory at six different constant temperatures (15, 20, 23, 25, 28, and 30°C each \pm 1°C). Lower thresholds (tL) for development were estimated from the linear regression of the developmental rates on each temperature. These data have made it possible to calculate the accumulated degree days (ADD) necessary for *C. vicina* to complete the larval stage and to achieve adult emergence. The minimal duration of development from oviposition to adult emergence was found to be inversely related to temperature. Additionally, six landmarks in pupal development are showed, and for each of the landmarks, the ADD value was calculated for every rearing temperature involved. These data assist in calculating the duration of the pupal stage based on morphological characteristics and would be of great value for future forensic entomological casework.

Defilippo°F, Luppi°A, Rubini°S, Calzolari°M, Dottori°M, Bonilauri°P

The use of forensic entomology in veterinary medicine : scientific and technical support in judicial investigations

LXVII Convegno Nazionale della Societa' Italiana delle Scienze Veterinarie (SISVET) : 17-19 Settembre 2013, Brescia : abstracts / [s.l. : s.n., 2013]. - p 86. - 2 bib ref [Nr. Estr. 5483]

Convegno Nazionale della Societa' Italiana delle Scienze Veterinarie (SISVET) (67. : Brescia : 17-19 Settembre 2013)

The forensic entomology can be used for the calculation of the Post-Mortem Interval (PMI) in medical legal investigation both in the human and veterinary field. In recent decades numerous are the cases of judicial finding of animal carcasses on which are needed to determine the time of death. This abstract describes one case. On March 3 2010 3 carrions of sheep, 3 carrions of pot-bellied pig, 3 carrions of *Dromaius novaehollandiae* and 1 carrion of *Canis lupus familiaris* at different decomposition stages were collected by veterinarian of Provincial Veterinary Service of Ferrara, in farm located in San Bartolomeo in Bosco (FE) together with Several insects (both larval and adults

stage) and sent immediately to Istituto Zooprofilattico Sperimentale of Lombardia and Emilia Romagna (IZSLER), , for diagnostic investigations and to determine the time of death. The insects sampled were: beetles (Staphilinidae, Dermestidae and Tenebrionidae) on the carcasses with the most advanced decomposition stages i.e. on every pot-bellied carrions, on one *Dromaius novaehollandiae*, and on one sheep; instead only Diptera (Calliphoridae, Stratiomidae and Piophilidae) were found on other carrions. The larvae were reared to adulthood. Time of hatch, together with species identification, macro and micro climate and lab developmental data were used to determine the time of death. We used two methods of dating the colonization: the Isomorphen-Isomegalen diagrams and the ADD concept [1 and 2]. The entomological evidence has allowed to date the death of different animal carcasses and to establish that the first animal has died on October 2009 while the last one died during the second half of February. The time was consistent with the time that the defendants were seen at the scene and was used to define the time spent by the abandonment of animals, without food. This case highlights such as entomological survey become powerful evidence for the length of time of abuse or neglect, in court. Forensic practice applied to pets is increasing in importance and in the veterinary profession has a key role to play. There is a need to enhance the awareness of veterinarians, to introduce teaching and specialized training and provide access to information accordingly. Systems and protocols, some similar to those used in human forensic medicine, must be established and used in veterinary cases. In this scenario the veterinary forensic entomology is not yet a recognized discipline but it is evolving rapidly.

Ferrari°M

Centro di Referenza Nazionale per i Metodi Alternativi : attività perseguita e nuove prospettive

Giornata di studio "Prodotto cosmetico: le sfide di quest'anno" : Milano, 20 Febbraio 2013 / a cura di Alberto Frigerio, Alessandra Lia. - Milano : Gruppo scientifico italiano studi e ricerche (GSISR), 2013. - (Rapporti GSISR ; 269) 17 p [Nr. Estr. 5266]

Giornata di studio "Prodotto cosmetico: le sfide di quest'anno" : Milano : 20 Febbraio 2013)

Ferrari°M

Il "Peso delle cose" a Silvia Dotti

30 giorni. - Vol. 6 no 9 (2013). - p 17-18 [Nr. Estr. 5529]

Gatti°L

Cinque percorsi FAD : i primi cinque casi

30 giorni. - Vol. 6 no 1 (2013). - p 40-43 [Nr. Estr. 5248]

Gatti°L, Gibellini°MV

Cinque nuovi casi FAD

30 giorni. - Vol. 6 no 2 (2013). - p 41-43 [Nr. Estr. 5267]

Gatti°L, Gibellini°MV

Cinque nuovi casi FAD

30 giorni. - Vol. 6 no 6 (2013). - p 41-43 [Nr. Estr. 5392]

Gatti°L, Gibellini°MV

Cinque nuovi casi FAD

30 giorni. - Vol. 6 no 10 (2013). - p 41-43 [Nr. Estr. 5616]

Gatti°L, Gibellini°MV

Cinque percorsi FAD

30 giorni. - Vol. 6 no 3 (2013). - p 41-43 [Nr. Estr. 5659]

Milito M, Giacomelli A, Franco A, Caprioli A, Cersini A, Pizzariello M, Cordaro G, Battisti A, Scholl F, Bassi°S, Carra°E, Dell'Aira E, Macri S, Brenda LG, Pietropaoli M, Formato G

Biochemical characteristics and susceptibility to antimicrobials of *Paenibacillus* larvae isolated in outbreaks of American foulbrood of honey bees occurred in Italy and Argentina

Apimondia XXXXIII International Apicultural Congress : 29 September - 04 October 2013 Kyiv / [Kyiv : s.n., 2013]. - 1 p. - 3 bib ref [Nr. Estr. 5689]

"Apimondia" International Apicultural Congress (43rd : Kyiv : 29 September - 04 October 2013)

Mulatti P, Ciocchetta S, Bonfanti L, Cazzin S, Angelini P, Natalini S, Bellini R, Bonilauri°P, Dottori°M, Capelli G, Marangon S, Ca Izolari°M

Determinants of the *Culex pipiens* mosquito dynamics in a West Nile Disease endemic area of Italy

7th Annual Meeting Epizone "Nothing permanent, except change" : 1-4 October 2013, Brussels : abstracts / [s.l. : s. n., 2013]. - p 182 [Nr. Estr. 5436]

Annual meeting Epizone (7th : Brussels : 1-4 October 2013)

Since its reappearance in 2008, West Nile virus (WNV) has expanded in several Italian regions. In northern Italy the WNV emerged in 2008 in Emilia-Romagna, Lombardy and Veneto regions simultaneously and was repeatedly detected in animals, humans and mosquitoes. Since then, regional entomological monitoring and surveillance programs in animals and humans. WNV has circulated continuously from 2009 to 2012 in the neighbouring regions of Veneto and Friuli Venezia Giulia, while was not detected anymore after 2010 in Emilia-Romagna and Lombardy regions. Recent identifications of multiple viral lineages and strains, together with the yearly recurrence of WNV in the same geographical areas suggest the possibility of both endemisation and repeated introductions via migratory birds. Estimations of the risk of disease spread necessarily require a deeper knowledge of the drivers of the WNV mosquito vectors dynamics. The recent expansion of WNV to previously unaffected areas has been hypothesized to be due also to the increase in the abundance and distribution of potential mosquito vectors, as a consequence of environmental and demographic changes. We analysed the seasonal growth dynamics of *Culex pipiens*, the major WNV vector in Italy. Data on mosquito abundance was obtained on a bi-weekly basis from May to November 2010 – 2012, using CDC-CO2 traps located at 110 sites in Veneto (19), Friuli Venezia Giulia (12) and Emilia Romagna regions (79). A series of different population growth models were fit to field data to evaluate the effect of extrinsic (environmental data: temperature, humidity and precipitation) and/or intrinsic density-dependent factors on *Cx. pipiens* dynamics. Initial comparison of alternative models of density-dependent and independent growth revealed overwhelming support for the density-dependent models, which explained substantially more variation in *Cx. pipiens* population growth rate than any environmental factor on its own. The best overall model for *Cx. pipiens* growth dynamics included both density dependent regulation and independent effects of precipitation, average humidity, and temperature in the two weeks before mosquito capture, indicating the primary importance of environmental conditions during larval development. This evidence of density-dependent population indicates that the per capita growth potential of *Cx. pipiens* populations increases as their numbers fall. Besides potentially posing a challenge to vector populations control campaigns, the results stress the need of incorporating density-dependence for robust prediction of *Cx. pipiens* population expansion and WNV transmission risk.

Nassuato C, Cerioli°M, Astuti M, Gemma_Brenzoni L, Avisani°D, Lavazza°A

A network program for health monitoring of apiaries in Lombardy (North Italy)

Apimondia XXXXIII International Apicultural Congress : 29 September - 04 October 2013 Kyiv / [Kyiv : s.n., 2013]. - 1 p [Nr. Estr. 5688]

"Apimondia" International Apicultural Congress (43rd : Kyiv : 29 September - 04 October 2013)

Parati K, Gentili G, Alborali°LG, Viglione M

Il carpione del garda : tutela di una specie a rischio di estinzione

Il carpione del garda: tutela di una specie a rischio di estinzione / testi a cura di Katia Parati ... [et al.]. - [Milano : Regione Lombardia, 2013]. - (Quaderni della ricerca ; 149) p 1-63 [Nr. Estr. 5404]

Parma L, Bonaldo A, Massi°P, Yúfera M, Martínez-Rodríguez G, Gatta PP

Different early weaning protocols in common sole (*Solea solea* L.) larvae : implications on the performances and molecular ontogeny of digestive enzyme precursors

Aquaculture. - Vol. 414-415 (2013). - p 26-35. - 63 bib ref [Nr. Estr. 5592]

The effects of early weaning on the performances and molecular ontogeny of digestive enzyme precursors in common sole (*Solea solea*) larvae were studied. Four experimental weaning time protocols (WPs) were performed in triplicate. One protocol was used for the control group where larvae were fed live feed until 27 days posthatching (dph) (WP-27) and weaned with dry feed. The other groups provided only with dry feed (WP-4), live feed until 13 dph (WP-13) and live feed until 18 dph (WP-18), followed by weaning on to the same commercial microdiet (MD) used in the WP-27 group (AgloNorse K/S Tromsø Fiskeindustri A/S & Co., Norway). The trial lasted until 33 dph. The larvae of the WP-4 group displayed a significantly lower survival rate, lower growth increase and a delay in the onset of metamorphosis when compared with the other groups. The WP-13 and WP-18 groups displayed significantly lower weight increases when compared with the WP-27 group, whereas metamorphosis development and survival were not influenced. Partial transcripts of trypsinogen 1 (*tryp1*), trypsinogen 3 (*tryp3*), trypsinogen Y (*trypY*), chymotrypsinogen (*chymt*), amylase (*amy*) and hepatic lipase (*HL*) were cloned and analysed by quantitative real-time PCR (qPCR). The *tryp1* and *chymt* mRNA levels displayed a rapid increase in all the treatments between 4 and 8 dph and thereafter displayed a homogeneous fluctuating pattern with a higher increasing tendency for *chymt* at the end of the trial. The amount of *tryp3* and *trypY* mRNA remained stable or slightly increased until 27 dph in all WP groups and thereafter displayed a general up-regulation trend. The *amy* transcript levels displayed a gradual increase throughout the study in all WP groups. The *HL* mRNA levels increased until 13 dph in the WP-27, WP-18 and WP-13 groups and thereafter remained generally stable until 27 dph, whereas in the WP-4 group, there was a linear time-related increasing trend until the end of the trial. This study supports previous results on the feasibility of early weaning of common sole larvae using a MD before the end of metamorphosis. The molecular ontogeny of some important digestive enzyme precursors is described for the first time in this species. The transcripts analysed were not greatly influenced by the WPs.

Pessina A, Coccè V, Bonomi A, Cavicchini L, Sisto F, Ferrari°M, Ciusani E, Navone S, Marfia G, Parati E, Alessandri G

Human skin-derived fibroblasts acquire in vitro anti-tumor potential after priming with Paclitaxel

Anti-cancer Agents Med Chem. - Vol. 13 (2013). - p 523-530. - 31 bib ref [Nr. Estr. 5359]

The main goal in cancer chemotherapy is to drive the drug into the tumor microenvironment to kill as many cancer cells as possible while producing the lowest collateral toxicity. Previously, we have shown that human bone marrow derived mesenchymal stromal cells (hBM-MSCs) exposed to Paclitaxel (PTX) were able to uptake and subsequently release the drug in the culture medium. PTX primed hBM-MSCs (hBM-MSCsPTX) located in the vicinity of cancer cells produced a strong inhibition of tumor cell growth both in vitro and in vivo. To expand these observations, in the present study we exposed human skin derived fibroblasts (hSDFs) to 2,000 ng/ml of PTX and then tested both cells and their conditioned medium (CM) in vitro for their capacity to inhibit the proliferation of human tumor cell lines (MOLT-4, DU-145, U87-MG, SH-SY5Y(+) and LAN-5). We found that hSDFs primed with PTX (hSDFsPTX) were able to uptake and subsequently release PTX in a time dependent manner. hSDFsPTX-derived CM(hSDFsPTX-CM) from 1:4 to 1:10 dilutions produced a significant ($p < 0.05$) in vitro tumor growth inhibition. hSDFsPTX co-cultured with leukemia cells at 1:1 to 1:10 ratio, completely inhibited cells growth whereas no inhibition was induced by normal hSDFs cells. Our results demonstrate for the first time that hSDFs can be loaded in vitro with PTX and thus can acquire a potent anti-tumor activity. Since hSDFs can be easily isolated from skin biopsies without any particular pain and discomfort to donor patients, we conclude that hSDFs may represent a valid cell type option for carrying and delivering anti-cancer drugs.

Pessina A, Coccè V, Pascucci I, Bonomi A, Cavicchini I, Sisto F, Ferrari^oM, Ciusani E, Crovace A, Falchetti ML, Zicari S, Caruso A, Navone S, Marfia G, Benetti A, Ceccarelli P, Parati E, Alessandri G

Mesenchymal stromal cells primed with Paclitaxel attract and kill leukaemia cells, inhibit angiogenesis and improve survival of leukaemia-bearing mice

British J Haematol. - Vol. 160 (2013). - p 766-778. - 49 bib ref [Nr. Estr. 5272]

Current leukaemia therapy focuses on increasing chemotherapy efficacy. Mesenchymal stromal cells (MSCs) have been proposed for carrying and delivery drugs to improve killing of cancer cells. We have shown that MSCs loaded with Paclitaxel (PTX) acquire a potent anti-tumour activity. We investigated the effect of human MSCs (hMSCs) and mouse SR4987 loaded with PTX (hMSCsPTX and SR4987PTX) on MOLT-4 and L1210, two leukaemia cell (LCs) lines of human and mouse origin, respectively. SR4987PTX and hMSCsPTX showed strong anti-LC activity. hMSCsPTX, co-injected with MOLT-4 cells or intra-tumour injected into established subcutaneous MOLT-4 nodules, strongly inhibited growth and angiogenesis. In BDF1-mice-bearing L1210, the intraperitoneal administration of SR4987PTX doubled mouse survival time. In vitro, both hMSCs and hMSCsPTX released chemotactic factors, bound and formed rosettes with LCs. In ultrastructural analysis of rosettes, hMSCsPTX showed no morphological alterations while the attached LCs were apoptotic and necrotic. hMSCs and hMSCsPTX released molecules that reduced LC adhesion to microvascular endothelium (hMECs) and down-modulated ICAM1 and VCAM1 on hMECs. Priming hMSCs with PTX is a simple procedure that does not require any genetic cell manipulation. Once the effectiveness of hMSCsPTX on established cancers in mice is proven, this procedure could be proposed for leukaemia therapy in humans.

Pizza G, De_Vinci C, Lo_Conte G, Brasa P, Zuffa S, Melchiorri L, Ferrari^oM

A human monoclonal antibody detecting a Tumor-associated antigen (Taa) expressed on several different solid tumors and its possible use for intracavitary prophylaxis in Non Invasive Bladder Cancer (NIBC)

Eur J Oncol. - Vol. 18 no 2 (2013). - p 63-73. - 26 bib ref [Nr. Estr. 5535]

Produzione di un anticorpo umano per immunoprofilassi passiva intracavitaria del carcinoma vescicale non infiltrante. Materiali e metodi: Mediante infezione con virus di Epstein-Barr (EBV) di linfociti del sangue periferico (PBL) di un paziente affetto da carcinoma è stata allestita una linea

linfoide in grado di produrre anticorpi anticancerosi. Successivamente la linea è stata fusa mediante glicole polietilene-co con un mieloma murino non secernente e sono stati selezionati doni produttivi. Risultati: Non si sono ri-levate immunoglobuline murine. Si descrivono gli studi eseguiti sul clone, Brit-26/Hy, che produce immuno-globuline umane di classe M e G1 che reagiscono con un antigene tumore associato (TAA) di 55 kDa di peso molecolare (MW). L'antigene è stato riscontrato in cellule provenienti da tumori solidi e linee tumorali di diversa istologia (carcinoma transizionale della vescica —TCCB-, rene, colon e adenocarcinoma mammario, glioblastoma) e non sembra reagire con le cellule normali del corrispondente tessuto. Conclusioni: Vista l'alta percentuale di cellule reattive nel TCCB e l'assenza di reattività verso le cellule transizionali vescicali si suggerisce l'uso di Brit-26/Hy nell'immunoprofilassi passiva intracavitaria del carcinoma vescicale non infiltrante (NIBC) dopo resezione transuretrale.

Production of a human monoclonal antitumour antibody for intracavitary immunoprophylaxis of non infiltrating bladder cancer. Materials and methods: A human anti-tumor-antibody-producing lymphoid cell-line was obtained by infection of peripheral blood lymphocytes (PBL) of a cancer patient with Epstein-Barr virus (EBV). Subsequently, the line has been fused with a murine myeloma and some human-antibodies-producing clones were selected by cluster picking. Results: No mouse immunoglobulins were detected. We describe here the studies performed on one of these clones, Brit-26/Hy, that produces human M and G1 class immunoglobulins reacting with a human Tumour-Associated Antigen (TAA) of 55 kDa Molecular Weight (MW). The antigen was found on cells from tumors and cell lines from different histology (Transitional Cell Carcinoma of the Bladder —TCCB-, kidney, colon and breast adenocarcinoma, glioblastoma) and does not seem to be expressed on normal cells of the corresponding tissue. Conclusions In consideration of the high percentage of reacting TCCB cells and absence of reaction with normal transitional cells of the bladder we suggest the use of Brit-26/Hy in passive immunoprophylaxis for relapsing Non Invasive Bladder Cancer (NIBC) after transurethral resection (TUR)s.

Renzi°S, Dotti°S, Crema M, Lombardo°T, Villa°R, Ferrari°M

Caratterizzazione di cellule limbal e cellule stromali mesenchimali (CSM) isolate da tessuto adiposo

26. Convegno Annuale della Associazione Italiana di Colture Cellulari (ONLUS-AICC) "Progressi e prospettive delle terapie cellulari", 4th International Satellite Symposium AICC-GISM "Mesenchymal stromal cells advances" : 20-22 Novembre 2013, Brescia / [s.l. : s.n., 2013]. - p 49 [Nr. Estr. 5655]

Convegno Annuale della Associazione Italiana di Colture Cellulari (ONLUS-AICC) : 26 International Satellite Symposium AICC-GISM : 4th : Brescia : 20-22 Novembre 2013)

Le prime evidenze pratiche dell'efficacia delle cellule isolate dal limbo nella rigenerazione corneale sono state ottenute a seguito del trapianto di frammenti dello stesso in una cornea danneggiata. Successivamente il tessuto limbale è stato coltivato in vitro e le cellule così ottenute sono state utilizzate per la cura di difetti visivi. Parallelamente, è stato accertato che anche le CSM limbali possono essere espanse in vitro, ed utilizzate per il trapianto nella sede corneale danneggiata, al fine di ripristinare le funzionalità visive compromesse. Nel presente studio le indagini sono state effettuate utilizzando il limbo di origine cunicola, quale modello per l'applicazione terapeutica negli animali. Il tessuto limbale è stato isolato e trattato come descritto da Ghafar 2013. La sospensione di cheratociti stromali è stata centrifugata ed il pellet lavato con PBS. Infine, i cheratociti isolati sono stati inoculati in una piastra per colture cellulari a 6 pozzetti (5x10³ cells/cm²) previamente stratificate con cellule murine irradiate (3T3), diluiti in terreno culturale specifico ed incubati a 37°C, 5% CO₂. Il tessuto adiposo retrobulbare ed addominale è stato disgregato enzimaticamente ed il pellet cellulare è stato inoculato ed incubato a 37°C, 5% CO₂. I cheratociti limbali sono stati valutati morfologicamente ed hanno evidenziato una forma dendritica/stellata a 7 giorni dall'inoculo. Le CSM derivate dal grasso retrobulbare ed addominale presentavano una forma di tipo fibroblastico. L'espressione genica è stata valutata mediante metodica EVA Green Real-Time PCR, al fine di accertare la presenza di marcatori specifici per i cheratociti corneali. L'analisi ha evidenziato la presenza di RNA di lumicano, aldehyde dehydrogenase (ALDH) e collagene tipo I (Coli I). Infine, è stata eseguita la prova di differenziamento cellulare per valutare la capacità delle CSM di tessuto adiposo delle due differenti sedi di assumere le caratteristiche tipiche delle cellule corneali. Tali

cellule sono state inoculate con terreno raccolto dalle colture di cellule limbal (terreno condizionato) ed incubate per 7 giorni. La coltura è stata monitorata giornalmente ed è stata evidenziata una variazione nella morfologia da fibroblastica a dendritica/stellata dopo 4 giorni di incubazione. I risultati ottenuti dovranno essere confermati mediante analisi di citofluorimetria, utilizzando marcatori specifici, quali: p63, ALDH, CK3, collagene I in quanto noti essere specifici per i cheratociti corneali e confermare la capacità differenziativa delle CSM. Lo studio in vitro delle CSM del tessuto adiposo retrobulbare ed adiposo e del loro differenziamento in cheratociti rappresenta un importante progresso nell'ambito della terapia cellulare rigenerativa, con potenzialità da approfondire e da valutare.

Renzi°S, Dotti°S, Villa°R, Lombardo°T, Ferrari° M

Limbal stem cells : a potential tool in corneal regeneration

LXVII Convegno Nazionale della Societa' Italiana delle Scienze Veterinarie (SISVET) : 17-19 Settembre 2013, Brescia : abstracts / [s.l. : s.n., 2013]. - p 142. - 1 bib ref [Nr. Estr. 5492]

Convegno Nazionale della Societa' Italiana delle Scienze Veterinarie (SISVET) (67. : Brescia : 17-19 Settembre 2013)

The aim of the study was the identification and characterization of limbal stem cells. In particular, isolation procedure was set up and ability of cells to differentiate in epithelial corneal tissue was investigated. This approach could be a potential therapeutic tool in order to repair corneal injury(1). Rabbit eyes and retrobulbar fat were sterile collected. The limbal tissue was separated and processed as described by Ghafar 2013. Isolated keratocytes were seeded at the density of 5 x 10³ cells/cm² in specific medium. Plates were incubated at 37°C 5% CO₂. Retrobulbar adipose tissue (RAT) was enzymatically digested and cell pellet was seeded and incubated at 37°C 5% CO₂. The morphological features of limbal keratocytes were examined daily by using phase contrast microscope. In order to perform a gene expression analysis, the limbal keratocytes monolayers was detached by trypsin-EDTA. Total RNA was extracted and used as template for cDNA synthesis. The expression of Lumican, aldehyde dehydrogenase (ALDH), Collagen type I (Coll I), α -smooth muscle actin (α -SMA) was evaluated using primer sets described in Ghafar 2013 by EVA Green Real-Time PCR amplification. GAPDH was used as housekeeping control gene. Finally, RATSCs were incubated with medium collected from LESC cultures for 7 days. Cells were daily observed in order to evaluate morphological features. LESC adhered to surface (24h) and they showed a dendritic, stellate-shaped on day 7. Finally, cells reached confluence on day 25. Retrobulbar adipose tissue stem cells began to adhere 24h after seeding, with a fibroblastic-like morphology. Finally, they reached confluence in 14 days. Cells incubated with LESC medium changed their morphology on day 4, acquiring a dendritic, stellate-shaped. The RT-PCR demonstrated the expression pattern typical of corneal keratocytes (α -SMA, LCN, ALDH and Coll I), until 4th passage. Nowadays, several researches and applications have been demonstrated the key role of LESC during corneal regeneration process either in animals or in human being (3,4,5). This study focused the attention on the in vitro features of two different kind of stem cells: LESC and RATSCs. In particular, they demonstrated the ability to adapt to in vitro environment and to apparently differentiate in epithelial-like cells. Furthermore, LESC expressed typical corneal keratocytes markers. These data will be improved by molecular biology analysis, in order to understand the complete expression pattern before and after in vitro differentiation.

Renzi°S, Riccò S, Dotti°S, Sesso L, Grolli S, Cor nali M, Carlin S, Patruno M, Cinotti°S, Ferrari°M

Autologous bone marrow mesenchymal stromal cells for regeneration of injured equine ligaments and tendons : a clinical report

Res Vet Sci. - Vol. 95 (2013). - p 272-277. - 21 bib ref [Nr. Estr. 5355]

The use of Mesenchymal Stromal Cells (MSCs) in orthopedic practice has recently and rapidly acquired an important role. Therapies based on the use of MSCs for the treatment of acute injuries as well as chronic inflammatory disorders are gradually becoming clinical routine. These cells have demonstrated intriguing therapeutic potentialities (i.e.: inflammation control, tissue regeneration and pathological scar prevention), that have been taken into consideration for use in both human and veterinary medicine. In particular, horses represent high performance athletes considered models for human pathologies since musculo-skeletal disorders frequently occur in this species. In the past, repair of tendon injuries were performed by different methods. In particular, clinical therapy was based on ice application, bandage, box rest and controlled exercise. An alternative approach consisted on the use of corticosteroid (inflammation reduction) and other drugs (sodium hyaluronate, polysulphated glycosaminoglycans, beta aminopropionitrile fumarate). Furthermore, surgical treatments like accessory ligament desmotomy, local irritation by line firing or pin firing were commonly used. More recently ultrasound, laser therapy, electromagnetic field therapy have been considered. Unfortunately, they did not allow complete tissue healing and quite often animals did not regain competitiveness. In order to minimize this inconvenience, the use of MSCs has been introduced as an alternative to the traditional approach since it represents a potential tool to improve tissue regeneration. Aim of this study was to evaluate the capability of MSCs to improve the functional outcome of horses affected by tendonitis and desmitis. Thirty-three breed and activity-matched horses affected by tendonitis or desmitis, were included in clinical trial scored for lesions and subdivided into two groups. Group 1 animals were treated with autologous MSCs, associated with platelet rich plasma (group 1). Bone marrow samples were collected from the sternum of the treated horses and processed in order to isolate MSCs. Following cell therapy, they were subjected to a rehabilitation period and their ability to resume training was evaluated. In this study, implanted MSCs caused no adverse reactions and thirteen out of the eighteen inoculated horses returned to race competitions. On the contrary, no improvement was seen in the twelve animals of group 2 treated with pin firing, that were not able to resume sport activity. In conclusion the clinical trial proves the safety of equine bone-marrow derived MSCs and a successful outcome of the treated animals that returned to their previous level of sport activity.

Ricco S, Renzi°S, Del_Bue M, Conti V, Merli E, Ram oni R, Lucarelli E, Gnudi G, Ferrari°M, Grolli S

Allogeneic adipose tissue-derived mesenchymal stem cells in combination with platelet rich plasma are safe and effective in the therapy of superficial digital flexor tendonitis in the horse

Int J Immunopathol Pharmacol. - Vol. 26 no 1 Suppl (2013). - p 61-68. - 35 bib ref [Nr. Estr. 5413]

Overstrain tendonitis are common pathologies in the sport horses. Therapeutic approaches to tendon healing do not always result in a satisfactory anatomical and functional repair, and healed tendon is often characterized by functional impairment and high risk of reinjury. Recently, mesenchymal stem cells (MSCs) and platelet rich plasma (PRP) have been proposed as novel therapeutic treatments to improve the tendon repair process. MSCs are multipotent, easy to culture and being originated from adult donors do not pose ethical issues. To date, autologous MSCs have been investigated mainly in the treatment of large bone defects, cardiovascular diseases, osteogenesis imperfecta and orthopaedic injuries both in human and veterinary medicine. The clinical applications in which autologous MSCs can be used are limited because patient-specific tissue collection and cell expansion require time. For clinical applications in which MSCs should be used right away, it would be more practical to use cells collected from a donor, expanded in vitro and banked to be readily available when needed. However, there are concerns over the safety and the efficacy of allogeneic MSCs. The safety and efficacy of a therapy based on the use of allogeneic adipose tissue-derived mesenchymal stem cells (ASCs) associated to platelet rich plasma (PRP) were evaluated in 19 horses affected by acute or subacute overstrain superficial digital flexor tendonitis (SDFT). The application of allogeneic ASCs neither raised clinical sign of acute or chronic adverse tissue reactions, nor the formation of abnormal tissue in the long term. After a follow—up of 24 months, 89.5% horses returned to their previous level of competition, while the reinjury rate was 10.5%, comparable to those recently reported for SDFT treated with autologous bone marrow derived MSCs. This study suggests that the association between allogeneic ASCs and PRP can be considered a safe and effective strategy for the treatment of SDF tendonitis in the horse.

Riva F, Trevisi E, Bani P, Minuti A, Amadori°M

Evaluation of innate immune responses in bovine forestomachs

10th International Veterinary Immunology Symposium (IVIS) : Milan, 28th August - 1st September 2013 : book of abstracts / [s.l. : s.n., 2013]. - p 187 [Nr. Estr. 5444]

International Veterinary Immunology Symposium (IVIS) (10th : Milan : 28th August - 1st September 2013)

Previous studies had indicated an active role of bovine forestomachs in the response to digestive disorders as well as to inflammatory and infectious processes in the gastro-intestina) (GI) tract and elsewhere. We investigated the potential of bovine forestomachs to receive, amplify and produce mediators of the innate immune response. Indeed, we detected the expression of TIR8 and other receptors and cytokines of the innate immune response, such as Toll-like receptor (TLR)4, interleukin (IL)-1beta, IL-10 and Caspase-1 in the forestomach walls of healthy cows. Their presence suggests an active role of forestomachs in inflammatory disorders of the GI tract and other body compartments. We confirmed and further characterized the presence of leukocytes and cytokines in the rumen fluids. In particular, T and B lymphocytes and myeloid lineage cells were detected in the ruminal content of both rumen-fistulated heifers and diseased cows. Also, leukocyte infiltration was modulated by feeding disorders: an acidogenic diet based on daily supplements of maize was shown to inhibit leukocyte accumulation, as opposed to a control, hay-based diet, with or without a soy flour (protein) supplement. A survey of 11 dairy farms indicated that low-stress diets and management were correlated with low levels of CD45 gene expression and B cell infiltration in rumen fluids, such as in the "control farm". In other farms, the rumen fluids of dairy cows showed increased levels of CD45 gene expression and numbers of leukocytes of different lineages (B-cells, T-cells, myeloid cells). This latter pattern of infiltration was correlated with an increased prevalence of inflammatory markers (positive and negative acute phase responses). On the whole, our results indicate that bovine forestomachs can receive and amplify signals for the immune cells infiltrating the rumen content and oral lymphoid tissues. Owing to the above, the examination of the rumen fluid could be a novel and useful diagnostic tool to support the clinical inspections of cattle herds.

Spagnoli°E, Grazioli°S, Dho°G, Brocchi°E

Identificazione e sierotipizzazione di virus aftosi mediante tecnologia Luminex

XV Congresso Nazionale SIDiLV : 23 - 25 Ottobre 2013, Monreale (PA) : volume degli atti / a cura di Santo Caracappa ... [et al.]. - [s.l. : Societa' Italiana Diagnostica di Laboratorio Veterinaria (SIDiLV), 2013]. - p 471-473. - 1 bib ref [Nr. Estr. 5561]

Congresso Nazionale Societa' Italiana Diagnostica di Laboratorio Veterinaria (SIDiLV) (15. : Monreale (PA) : 23-25 Ottobre 2013)

Luminex technology allows for multiplexing of different analyses simultaneously in a single reaction using differently fluorescently dyed microspheres as adsorbing surface. The aim of this study was to explore the potential of this multiplexing system for the diagnosis and serotyping of FMD viruses. The multiplex assay was implemented using beads coupled with 7 different monoclonal antibodies (MAbs) specific for five FMDV serotypes. One biotinylated pan-FMDV MAb was used as universal detector; its binding to the streptavidin-phycoerythrin allows tracking and quantification of the antigen. 200 negative tongue epithelium suspensions and 21 FMDV isolates representative of serotypes O, A, C, Asia1 and SAT1 were tested against the 7 MAbs in a single well; a MAbs-based ELISA kit was run in parallel. No false-positive was found in negative samples, while all FMD strains were correctly detected and serotyped. The multiplex test showed analytical sensitivity up to 10-fold higher than ELISA.

Stacchiotti A, Favero G, Lavazza^oA, Rodella LF, Rezzani R

Melatonin impact on cyclosporine-induced liver damage : an update

Microscopy Conference MC 2013 : August 25-30, 2013 Regensburg, Germany : proceedings life sciences (LS), multimodal and Interdisciplinary microscopies (MIM) / [s.l. : University of Regensburg, 2013]. - p 92-93. - 4 bib ref [Nr. Estr. 5408]

Microscopy Conference : Regensburg, Germany : August 25-30, 2013)

Cyclosporine A (CsA) is the elective immunosuppressive drug in transplantation and autoimmune disorders, even if among its multiple side effects, liver damage limits clinical application. Chronic CsA delivery induces in the liver a hypermetabolic state and oxidative damage, ROS production, associated with a stress response [1]. Melatonin, the indolamine produced by the pineal gland, has been proven to be particularly effective in the amelioration of respiratory balance in health and diseases [2].

Nevertheless the contribution of autophagy (or macroautophagy), the pivotal process that removes abnormal proteins or organelles, like mitochondria and peroxisomes, to preserve homeostasis during CsA therapy is still emerging. This microscopic study aimed to further demonstrate the beneficial melatonin role in the liver treated with CsA focusing on autophagosomes, mitochondria, ER morphology and chaperones expression in the rat. Sprague-Dawley rats were s.c. injected with CsA (15 nng/Kg/day), melatonin alone (1 mg/Kg/day), or with melatonin and CsA, at the above dosage, for 30 days. The liver was extracted and processed for histopathological, enzymatic, immunohistochemical and ultrastructural analysis. Mitochondria damage was evaluated by cytochrome c-oxidase histochemistry, ER stress by immunostaining of resident chaperones (GRP78, GRP94), autophagic flux by the presence of autophagosomes and autophagolysosomes by TEM analysis and by immunostaining of ubiquitin and p62/sequestome-1 protein, a marker of autophagic flux. To best characterize an efficient autophagic flux in the liver and mitochondria ultrastructure we inserted, as positive control, 24h fasted rats [3]. Melatonin supplementation restored cytochrome c oxidase-positive brown signal in the cytoplasm of hepatocytes whereas it almost disappeared in CsA-treated group. Moreover during immunosuppressive regimen, RER fragmentation (Figure 1) and chaperones overexpression, late autophagosomes, often mitophagosomes, together with intense ubiquitin and p62-positive aggregates were seen in hepatocytes. By contrast, in rats given CsA plus melatonin, RER morphology was restored and autophagosomes almost absent (Figure 2), p62 and ubiquitin immunostainings became weak. In 24h-fasted rats ER dilatation, perinuclear elongated mitochondria and autophagic vacuoles were detected in hepatocytes (Figure 3). These novel observations suggest that melatonin alleviates CsA-induced hepatotoxicity by restoring proper mitochondria, ER organization and stimulating autophagic flux, so keeping an adequate cellular detoxification ability. In conclusion, in this chronic in vivo model melatonin, acting in the recovery of adaptive autophagy and hampering ER stress-driven apoptosis, further confirms its efficacy to contrast hepatic damage.

Stella S, Martino PA, Tosi^oG, Massi^oP, Tirloni E, Cossettini C

Valutazione dell'efficacia di Fitocsc® nei confronti di ceppi di E. coli e Salmonella spp. antibiotico-resistenti isolati dal pollame

Atti della Societa' Italiana di Patologia Aviare (SIPA) : Forlì, 11-12 Aprile 2013 : LII Convegno annuale / [s.l. : s.n., 2013]. - p 193-195 [Nr. Estr. 5317]

Convegno annuale Societa' Italiana Patologia Aviare (SIPA) (52 : Forlì : 11-12 Aprile 2013)

Villa^oR, Lombardo^oT, Renzi^oS, Dotti^oS, Amadori^o M, Ferrari^oM

BVR: an Italian biobanking of veterinary resources at IZSLER

7th Annual Meeting Epizone "Nothing permanent, except change" : 1-4 October 2013, Brussels : abstracts / [s.l. : s. n., 2013]. - p 125 [Nr. Estr. 5429]

Annual meeting Epizone (7th : Brussels : 1-4 October 2013)

The Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna (IZSLER) is a Veterinary Institution of the Ministry of Health. The performed activities include diagnostic services on animal diseases and zoonoses, set up of diagnostic methodologies, control activity on human and animal foodstuffs and applied research in the area of breeding hygiene, in order to improve zootechnic productions and animal welfare. In this context, it has been developed an Italian Biobank of Veterinary Resources (IBVR), in order to collect biologicals of different types, characterized by well-defined features. In particular, in the infrastructure are stored: cell cultures, bacteria, viruses, parasites, immune sera, monoclonal antibodies, histological samples. These resources have been identified as reference materials, employed in the routinely activities of IZSLER and at disposal to others. In order to improve the quality of activities performed by IZSLER it has been developed a harmonized approach on biobanking practices that ensure the availability of biological resources and the cooperation with international laboratories. The importance of networking of biobanks has been emphasized, in order to promote a global cooperation. This approach will permit to investigate and compare samples and data from different part of the world. Biobank networking is the key area in order to speed up the discovery and the development of new diagnostic tools and therapies. In particular, this strategy would allow studies with a large number of samples, permitting a major reliability of outcomes and to avoid to repeat experimental studies aimed to obtain reference samples.