Curriculum Vitae

María Teresa ARMÚA FERNÁNDEZ

Actualizado: 12/01/2017

Publicado: 12/06/2017

Sistema Nacional de Investigadores

Ciencias Agrícolas / Ciencias Veterinarias

Categorización actual: Iniciación

Ingreso al SNI: Activo(01/06/2016)

Datos generales

Información de contacto

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URL: https://www.researchgate.net/profile/Maria_Armua-Fernandez/contributions

Institución principal

Laboratorio de Vectores y Enfermedades transmitidas / Regional Norte - UDeLaR / Universidad de la República / Uruguay

Dirección institucional

Dirección: Regional Norte - UDeLaR / Fructuoso Rivera 1350 / 50000 / Salto / Salto / Uruguay

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Formación

Formación concluida

Formación académica/Titulación

Posgrado

2007 - 2011 Doctorado

Hokkaido University, Graduate School of Veterinary Medicine , Japón

Título: Development of molecular diagnostic tools for canine taeniosis

Tutor/es: Ken Katakura

Obtención del título: 2011

Becario de: Ministry Of Education Science And Culture , Japón , Japón

Palabras clave: molecular diagnostic tools; canine taeniosis

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas / Desarrollo de técnicas moleculares

Grado

1995 - 2005 Grado

Doctor en Medicina y Tecnología Veterinaria*

Facultad de Veterinaria - UDeLaR, Universidad de la República , Uruguay

Obtención del título: 2005

Palabras clave: Medicina Veterinaria

Areas del conocimiento: Ciencias Médicas y de la Salud / Otras Ciencias Médicas / Otras Ciencias Médicas / Veterinaria

Formación complementaria

Cursos corta duración

12 / 2015 - 12 / 2015 Curso Filogenia Molecular: Inferencia y Aplicaciones
MEC. Instituto de Investigaciones Biológicas «Clemente Estable», Ministerio de Educación y Cultura , Uruguay
Palabras clave: Máxima verosimilitud; Inferencia bayesiana; Filogenia Molecular
Areas del conocimiento: Ciencias Naturales y Exactas / Ciencias Biológicas / Biología y Biología de la Evolución

09 / 2015 - 11 / 2015 Sistemática biológica: métodos y principios
Facultad de Ciencias - UDeLaR, Universidad de la República , Uruguay
Palabras clave: Máxima Parsimonia; Filogenia
Areas del conocimiento: Ciencias Naturales y Exactas / Ciencias Biológicas / Biología y Biología de la Evolución

04 / 2009 - 03 / 2011 Expert in Zoonosis control
Hokkaido University , Japón
Palabras clave: zoonosis control
Areas del conocimiento: Ciencias Médicas y de la Salud / Ciencias de la Salud / Salud Pública y Medioambiental / Control de Zoonosis

01 / 2004 - 03 / 2004 Control Measures against Echinococcosis
Hokkaido Institute of Public Health , Japón
Palabras clave: Echinococcosis

Construcción institucional

Idiomas

Español
Entiende (Muy Bien) / Habla (Muy Bien) / Lee (Muy Bien) / Escribe (Muy Bien)
Inglés
Entiende (Muy Bien) / Habla (Muy Bien) / Lee (Muy Bien) / Escribe (Muy Bien)
Japonés
Entiende (Regular) / Habla (Regular) / Lee (Regular) / Escribe (Regular)
Portugués
Entiende (Muy Bien) / Habla (Bien) / Lee (Muy Bien) / Escribe (Regular)

Areas de actuación

Ciencias Médicas y de la Salud / Otras Ciencias Médicas / Otras Ciencias Médicas / Veterinaria
Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Actuación Profesional

Cargos desempeñados actualmente

Desde: 02/2015
Asistente , (Docente Grado 2 Titular, 40 horas semanales) , Regional Norte - UDeLaR , Uruguay

Hokkaido University , Japón

Vínculos con la institución

04/2007 - 03/2011, *Vínculo:* estudiante de doctorado, (50 horas semanales)

Actividades

04/2007 - 03/2011
Líneas de Investigación
Desarrollo de tecnicas moleculares de diagnostico parar cestodiosis caninas , Otros

04/2007 - 03/2011

Docencia , Pregrado

Parasitología , Asistente , Clases prácticas del curso curricular de Parasitología

04/2007 - 03/2011

Proyectos de Investigación y Desarrollo , Universidad de Hokkaido/Facultad de Medicina Veterinaria , Laboratorio de Parasitologia

Desarrollo de tecnicnas moleculares para diagnositico de cestodiosis canina , Integrante del Equipo

Universidad de Zurich , Suiza

Vínculos con la institución

10/2011 - 04/2015, *Vínculo:* *postdoc, (42 horas semanales / Dedicación total)*

Actividades

10/2011 - 03/2015

Líneas de Investigación

Animal models for intestinal Echinococcus multilocularis infections and Alveolar Echinococcosis (AE) in aberrant hosts , Integrante del Equipo

10/2011 - 03/2015

Capacitación/Entrenamientos dictados

Parasitological necropsy in canids

10/2011 - 03/2015

Capacitación/Entrenamientos dictados

Molecular tools for the diagnosis of taeniids in definitive hosts

10/2011 - 03/2015

Proyectos de Investigación y Desarrollo

Development of a rat model for the study of E. multilocularis oncosphere's invasion , Coordinador o Responsable

10/2011 - 03/2015

Proyectos de Investigación y Desarrollo

Study of the mucosal adjuvant effect of Cholera toxin for Echinococcus granulosus infection in dogs , Integrante del Equipo

Universidad de la República , Regional Norte - UDeLaR , Uruguay

Vínculos con la institución

02/2015 - Actual, *Vínculo:* *Asistente , Docente Grado 2 Titular, (40 horas semanales)*

Actividades

02/2015 - Actual

Líneas de Investigación , Laboratorio de Vectores y Enfermedades transmitidas

Caracterización molecular y estudios filogenéticos de las especies de Lymnaea presentes en el Uruguay , Coordinador o Responsable

02/2015 - Actual

Líneas de Investigación

Detección de patógenos de enfermedades transmitidas por vectores de la región noroeste de Uruguay , Integrante del Equipo

03/2015 - 08/2015

Docencia , Pregrado

Introducción a la Biología 2 , Organizador/Coordinador , Ciclo inicial optativo ciencia y tecnología

Lineas de investigación

Título: Animal models for intestinal Echinococcus multilocularis infections and Alveolar Echinococcosis (AE) in aberrant hosts

Tipo de participación: Integrante del Equipo

Areas del conocimiento: Ciencias Médicas y de la Salud / Otras Ciencias Médicas / Otras Ciencias Médicas

Título: Caracterización molecular y estudios filogenéticos de las especies de Lymnaea presentes en el Uruguay

Tipo de participación: Coordinador o Responsable

Palabras clave: Lymnaea sp.; caracterización molecular; estudios filogenéticos

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Título: Desarrollo de tecnicas moleculares de diagnostico parar cestodiosis caninas

Tipo de participación: Otros

Palabras clave: PCR; hibridación ADN-ADN

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas / Desarrollo de tecnicas moleculares de diagnostico parar cestodiosis caninas

Título: Detección de patógenos de enfermedades transmitidas por vectores de la región noroeste de Uruguay

Tipo de participación: Integrante del Equipo

Palabras clave: Ixódidos; vectores

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

Proyectos

2007 - 2011

Título: Desarrollo de tecnicnas moleculares para diagnositico de cestodiosis canina, *Tipo de participación:* Integrante del Equipo,

Tipo: Investigación

Alumnos: 1(Doctorado)

Financiadores: Institución del exterior / Beca

Palabras clave: taeniid eggs; fecal samples; molecular tools

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

2011 - 2015

Título: Development of a rat model for the study of E. multilocularis oncosphere's invasion, *Tipo de participación:* Coordinador o Responsable,

Tipo: Investigación

Alumnos:

Financiadores: Universidad de Zurich / Apoyo financiero

Palabras clave: Echinococcus multilocularis; oncospheres; rat model

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la manipulación de células, tejidos, órganos o todo el org

2011 - 2015

Título: Study of the mucosal adjuvant effect of Cholera toxin for Echinococcus granulosus infection in dogs, *Tipo de participación:* Integrante del Equipo,

Tipo: Investigación

Alumnos:

Financiadores: Universitat Zurich / Cooperación

Palabras clave: Echinococcus granulosus; dog infection; Cholera toxin

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Biotecnología relacionada con la Salud

Producción científica/tecnológica

Dentro de la familia Taeniidae se encuentran varias especies con gran relevancia médica y veterinaria. A destacar, Echinococcus multilocularis y E. granulosus son las dos especies zoonóticas mas importantes. Varios tipos de canídos (perros, zorros, lobos, etc.) actúan como hospederos definitivos albergando las formas adultas de dichos cestodes en el intestino delgado pero sin desarrollar enfermedad aparente. Sin embargo, en los hospederos intermediarios (bovinos, ovinos, suinos, roedores e incluso el hombre) la forma larvaria (metacestode) genera un daño grave en los órganos en que se aloja y puede causar la muerte si no es detectada a tiempo. Tanto la echinococcosis alveolar (E. multilocularis) como la quística (E. granulosus) tienen gran importancia económica y en salud pública ya que son zoonosis que afectan millones de humanos y animales de producción alrededor del mundo. El doctorado realizado en la Universidad de Hokkaido (Japón) se enfocó en el desarrollo de técnicas moleculares para el diagnóstico de diferentes taenidos en cánidos. El muestreo no invasivo de los cánidos se lleva a cabo a través de la colecta de materia fecal. Ya que muchas de las muestras fecales son colectadas a campo es esencial identificar de manera eficaz a que tipo de animal pertenece cada muestra. Por lo tanto,

durante el doctorado colaboré en el desarrollo de una multiplex PCR capaz de distinguir entre 6 especies diferentes de hospederos definitivos. Allí también desarrollé una técnica de hibridación con sondas específicas (Dot blot) con la cual es posible detectar y diferenciar varios taenidos que pueden estar parasitando un mismo cánido. El postdoctorado realizado en la Universidad de Zúrich dio continuidad a la línea de investigación sobre la biología de Echinococcus spp. abordando diferentes aspectos. Algunos de los trabajos que llevé a cabo se enfocaron en el estudio de diferentes modelos animales que incluyeron i) la evaluación in vivo de la resistencia de los huevos de E. multilocularis sometidos a diferentes tratamientos térmicos utilizando un modelo murino, ii) el desarrollo de la forma larvaria de E. multilocularis en modelos animales alternativos (ratas) y iii) el estudio de la respuesta inmune de perros frente a infecciones reiteradas con E. granulosus. Dichos trabajos han contribuido para mejorar el conocimiento del comportamiento de estos parásitos en diferentes hospederos. Por otro lado, colaboré en diferentes estudios epidemiológicos y de distribución geográfica de E. multilocularis en Suecia, Portugal, Italia, Kosovo y Bután. En febrero de 2015, surgió la posibilidad de retornar a Uruguay y unirme al equipo del Laboratorio de vectores y enfermedades transmitidas que es uno de los polos de desarrollo universitario (PDU) del Centro Universitario Regional del Litoral Norte (Cenur), sede Salto. En este laboratorio se están desarrollando diferentes líneas de investigación de vectores y hospederos intermediarios con gran relevancia en la región que incluyen estudios filogéneticos del género Lymnaea (hospedero intermediario de Fasciola hepatica), el cual soy responsable, así como, en el estudio de enfermedades transmitidas por garrapatas (bacterias y protozoarios).

Producción bibliográfica

Artículos publicados

Arbitrados

Completo

THAPA, N.K.; ARMUA-FERNANDEZ, M. T.; KINZANG, D.; GURUNG, R. B.; WANGDI, P. ; DEPLAZES, P.

Detection of Echinococcus granulosus and Echinococcus ortleppi in Bhutan. Parasitology International, 2017

Palabras clave: Echinococcus spp.; Taenia hydatigena; yaks; cattle; Bhutan; community dogs

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

ISSN: 13835769

In this pilot study, fecal samples were collected from community dogs around slaughterhouses and from the city of Thimphu (n=138) as well as from carnivores in the forest area around a farm in Bhutan (n= 28). Samples were analyzed microscopically for the presence of taeniid eggs by the floatation and sieving method. Further molecular analyses of 20 samples of community dogs positive for taeniid eggs confirmed 10 Echinococcus granulosus sensu lato and one Taenia hydatigena case. From 14 environmental fecal samples from the forest area positive for taeniid eggs, one contained E. granulosus s.l., six T. hydatigena and one Taenia taeniaeformis DNA. In the remaining samples considered positive for taeniid eggs, no molecular confirmation could be achieved. Additionally, Echinococcus cysts were collected from locally slaughtered cattle and imported cattle organs. Seven Echinococcus cysts (one fertile) from the local animals and 35 (four fertile) from imported cattle organs were confirmed as E. granulosus (G1-3) by PCR/sequencing. One Echinococcus cyst each from a local animal and from an imported cattle organ (both fertile) were confirmed to be Echinococcus ortleppi (G5). Sterile Echinococcus cysts were also collected from local yaks (n=10), and all revealed to be E. granulosus (G1-G3). Hospital records of cystic echinococcosis in humans and the presence of Echinococcus spp. in dogs and ungulates indicate the existence of local transmission for both E. ortleppi and E. granulosus in Bhutan.

Completo

FEDERER, K.; ARMUA-FERNANDEZ, M. T.; GORI, F.; HOBY, S.; WENKER, C.; DEPLAZES, P.

Detection of taeniid (Taenia spp., Echinococcus spp.) eggs contaminating vegetables and fruits sold in European markets and the risk for metacestode infections in captive primates. International Journal for Parasitology, 2016

Palabras clave: alveolar echinococcosis; Monkey; Primate

Areas del conocimiento: Ciencias Médicas y de la Salud / Ciencias de la Salud / Parasitología

Medio de divulgación: Internet ; *ISSN:* 00207519 ; *DOI:* 10.1016/j.ijppaw.2016.07.002

Due to frequent cases of alveolar echinococcosis (AE) in captive primates in Europe, 141 samples of food, which consists mostly of vegetables and fruits, were investigated for contamination with egg-DNA of taeniids. Each sample consisted of at least 40 heads of lettuce as well as various vegetables and fruits. The samples were purchased at different times of the year: either from September to November (autumn), originating from greenhouses or fields in the Basel region in the North of Switzerland, or in April and May (spring) when fruit and vegetables are sourced from throughout Europe from various wholesalers. Each sample was washed, and the washing water sieved through mesh apertures of 50 μm and 21 μm, respectively. The debris, including taeniid eggs, collected on the 21 μm sieve were investigated by a multiplex PCR-analysis followed by direct sequencing. In 17 (18%) of the 95 samples collected in autumn, taeniid-DNA was detected (Taenia hydatigena in four, T. ovis in three, T. polyacantha in two and Hydatigera (Taenia)

taeniaeformis in five cases). Similarly, in 13 (28%) of the 46 samples collected during spring taeniid-DNA was detected (Echinococcus granulosus s.l. in two, T. crassiceps in one, T. hydatigena in two, T. multiceps/T. serialis in two, T. saginata in one and H. taeniaeformis in five cases). Although DNA of E. multilocularis was not found specifically in this study, the detection of other fox taeniids reveals that vegetables and fruit fed to the primates at the Zoo Basel at different times of the year and from different origin are contaminated with carnivore's faeces and therefore act as a potential source of AE infections.

Completo

ARMUA-FERNANDEZ, M. T.; CASTRO, O.; CORREA, O.; CARVALHO, L.; MANGOLD, A.; SANCHIS, J.; VENZAL, J.
First molecular characterization of Galba neotropica in Uruguay. FAVE - Sección Ciencias Veterinarias, *v.:* 15, *p.:* 9 - 13, 2016

Palabras clave: Galba neotropica; molecular characterization; Uruguay

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Medio de divulgación: Internet ; *ISSN:* 03253112 ; *DOI:* favecv.v15i1/2.5978

Until recently, it was believed that only two lymnaeid species (i.e. Galba viatrix and Pseudosuccinea columella) occurred in Uruguay. However, based on a molecular approach, an additional species Galba cubensis, was recently discovered. The aim of this study was to molecularly characterize different lymnaeid populations from the northern region of Uruguay. The lymnaeids collections were carried out in two farms of the departments of Paysandú and Tacuarembó. The collected lymnaeids were divided in two fractions, one fraction was used for conchological analyses and detection of trematode larval stages, while the other fraction was used for molecular studies. Three PCRs targeting the 16S, ITS-2 and COI DNA regions were performed and the amplicons obtained were direct sequenced. The sequences were used for homology search and construction of phylogenetic trees by the maximum-likelihood method. The sequencing results revealed that both isolates corresponded to Galba neotropica. The phylogenetic analyses placed our isolates among the G. neotropica monophyletic group, closely related to other isolates of this species found in several South American countries. To our knowledge, this is the first record of G. neotropica in Uruguay and the confirmation as competent intermediate host of Fasciola hepatica. Further studies are needed to define the distribution and the role of each lymnaeid species in the transmission of F. hepatica in Uruguay.

Completo

ARMUA-FERNANDEZ, M. T.; JOEKEL, D.; SCHWEIGER, A.; EICHENBERGER, R.M.; MATSUMOTO, J.; DEPLAZES, P.
Successful intestinal Echinococcus multilocularis oncosphere invasion and establishment in resistant RccHanTM:WIST rats after pharmacological immunosuppression. Parasitology, *v.:* 143 10, *p.:* 1252 - 1260, 2016

Palabras clave: alveolar echinococcosis; Echinococcus multilocularis; immunosuppression; metacestode; rat; resistance

Areas del conocimiento: Ciencias Médicas y de la Salud / Ciencias de la Salud / Parasitología

Medio de divulgación: Internet ; *ISSN:* 00311820 ; *DOI:* 10.1017/S0031182016000809

Susceptibility/resistance to larval Echinococcus multilocularis infection varies greatly depending on host species and strains. Whereas several mice strains and non-human primates are highly susceptible to alveolar echinococcosis, rats and most of humans are considered as more resistant. In this study, we aimed to elucidate factors responsible for host resistance in rats (Experiments A–D). (A) The parasite establishment was not observed in immunocompetent Wistar rats orally inoculated with sodium hypochlorite resistant eggs with/without pig bile, or activated/non-activated oncospheres (NAO). Peritoneal inoculation with NAO s or metacestode tissue allowed the parasite establishment in rats. (B) T-cell-deficient athymic nude rats showed complete resistance against the metacestode establishment after oral inoculation with parasite eggs. This finding suggests that T-cell-independent parasite clearance occurred in the animals during early phase of the parasite in- vasion. Finally, Wistar rats that received pharmacological immunosuppression using either dexamethasone (DMS) alone or methotrexate (MTX) i.p. alone or a combination of these compounds were orally inoculated with the parasite's eggs. As a result (D), successful establishment of metacestode with protoscoleces was observed in all 3 rats treated with DMS (s.c.) alone or in all 6 rats treated with DMS (s.c.) plus MTX but not in 8 rats with MTX alone, suggesting that factors affected by DMS treatment are responsible to regulate the parasite invasion and establishment.

Completo

CARVALHO, L.; ARMUA-FERNANDEZ, M. T.; SOSA, N; FéLIX, M. L.; VENZAL, J. M.

Anaplasma platys in dogs from Uruguay. Ticks and Tick-borne Diseases, 2016

Palabras clave: Anaplasmataceae; Ehrlichia canis; Dogs; Rhipicephalus sanguineus; Uruguay

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Medio de divulgación: Internet ; *ISSN:* 1877959X

Anaplasmataceae family members include vector-borne bacteria of veterinary importance that may also affect humans. Ehrlichia canis and Anaplasma platys are the main members of this family detected in dogs worldwide. In Uruguay there are not many published studies on tick-borne pathogens affecting dogs, the only haemoparasite molecularly confirmed in dogs, is the piroplasm Rangelia vitalii. The aim of the present work was to detect the presence of A. platys and E.

canis in dogs and dogs-associated ticks of two localities in Northwestern Uruguay. Blood samples from dogs with and without clinical signs associated with vector-borne diseases, and Rhipicephalus sanguineus obtained from these dogs were analyzed by PCR for Anaplasmataceae. Positive dogs were further analyzed by PCR for Ehrlichia spp. and A. platys. All the ticks were found negative. No dog was detected infected with E. canis, while eight dogs (4.2%) were found to be infected with A. platys. Phylogenetic analysis of groESL operon sequence for A. platys revealed no differences with sequences described for A. platys in neighbor countries and from other regions of the world. This is the first report of the presence of A. platys in Uruguay.

Completo

FEDERER, K; ARMUA-FERNANDEZ, M. T.; HOBY, S; C. WENKER; DEPLAZES, P.

In vivo viability of Echinococcus multilocularis eggs in a rodent model after different thermo-treatments.. Experimental Parasitology (E), 2015

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Biotecnología relacionada con la Salud

Medio de divulgación: Internet ; *ISSN:* 10902449

Echinococcus multilocularis is the causative agent of alveolar echinococcosis, a serious and emerging zoonotic disease in many parts of the northern hemisphere. Humans but also primates and other accidental hosts can acquire the infection by the ingestion of eggs excreted by the carnivore definitive hosts, e.g. after hand contact with egg-contaminated environments or by consumption of contaminated food or beverages. The goal of this study was to develop a sensitive in vivo method to determine the viability of E. multilocularis eggs and to establish suitable conditions (optimal temperature, exposure time and humidity) for their (prophylactic) inactivation. The sensitivity of a rodent model was evaluated and, conclusively, C57Bl/6 mice were most susceptible to subcutaneous inoculation of small numbers of sodium hypochlorite-resistant oncospheres, even more than to oral inoculation of mature eggs. In the second part of the study, various combinations of exposure temperature (between 45 °C and 80 °C), times (between 30 min and 180 min) and relative humidity (70% vs. suspended in water) were tested. After heat treatment in an incubator, the sodium hypochlorite resistance test was used to assess in vitro egg viability at the time of inoculation. Subsequently, the infectivity of the oncospheres was evaluated by subcutaneous inoculation in mice. Eggs exposed to increasing temperatures were more resistant to heat if suspended in water as compared to eggs exposed on a filter paper at 70% relative humidity. As survival of eggs in water droplets on the vegetables cannot be excluded, further experiments were performed with eggs suspended in water only. Eggs were infectious after heat exposure at 65 °C for up to 120 min, however, no echinococcosis developed after treatment of the eggs at 65 °C for 180 min or at 70, 75 and 80 °C for 7.5, 15 or 30 min.

Completo

GORI, F.; ARMUA-FERNANDEZ, M. T.; MILANESI, P.; SERAFINI, M.; MAGI, M.; DEPLAZES, P.; MACCHIONI, F.

The occurrence of taeniids of wolves in Liguria (northern Italy). International Journal for Parasitology, 2015

Palabras clave: Liguria-Italy; Canis lupus italicus; Echinococcus granulosus; PCR; 12S; nad1

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

ISSN: 00207519

Canids are definitive hosts of Taenia and Echinococcus species, which infect a variety of mammals as intermediate or accidental hosts including humans. Parasite transmission is based on domestic, semi-domestic and wildlife cycles; however, little is known of the epidemiological significance of wild large definitive hosts such as the wolf. In this study, 179 scats of wolves (Canis lupus italicus) collected throughout the Italian region of Liguria were analyzed for the detection of taeniid infection. Taeniid egg isolation was performed using a sieving/flotation technique, and the species level was identified by PCR (gene target: 12S rRNA and nad 1) followed by sequence analyses. Based on sequence homologies of ≥99%, Taenia hydatigena was identified in 19.6%, Taenia krabbei in 4.5%, Taenia ovis in 2.2%, Taenia crassiceps in 0.6%, Hydatigera taeniaeformis in 0.6% and Echinococcus granulosus in 5.6% of the samples. According to these results, Canis lupus italicus can be considered as involved in the wild (including cervids and rodents) and semi-domestic cycles (including sheep and goats) of taeniids in this area.

Completo

ARMUA-FERNANDEZ, M. T.; CASTRO, O.F.; CRAMPET, A.; BARTZABAL, A.; HOFMANN-LEHMANN, R.; GRIMM, F.; DEPLAZES, P.

First case of peritoneal cystic echinococcosis in a domestic cat caused by Echinococcus granulosus sensu stricto (genotype 1) associated to feline immunodeficiency virus infection. Parasitology International, *v.:* 63, *p.:* 300 - 302, 2014

Palabras clave: Echinococcus granulosus; Hydatid cyst; Domestic cat; Feline immunodeficiency virus

Areas del conocimiento: Ciencias Naturales y Exactas / Ciencias Biológicas / Otros Tópicos Biológicos

Medio de divulgación: Internet ; *ISSN:* 13835769

A new cystic echinococcosis case in a cat in Uruguay is reported herein. The cat was taken to a veterinary clinic in Rocha city, Uruguay, due to dyspnea, constipation and abdominal enlargement. During surgery a large quantity of cysts was retrieved from the abdominal cavity. The cysts were morphologically studied and confirmed as Echinococcus granulosus sensu stricto (genotype 1) by molecular tools using cytochrome oxidase submit 1 and small subunit ribosomal RNA gene as target genes. Moreover, for the first time a coinfection with feline immunodeficiency virus (FIV) was detected. FIV-induced immunosuppression could be a determining factor in the development of cystic echinococcosis in cats.

Completo

JENKINS, D; URWIN, N; WILLIAMS, T; MITCHELL, K; LIEVAART, J; ARMUA-FERNANDEZ, M. T.

Red foxes (Vulpes vulpes) and wild dogs (dingoes (Canis lupus dingo) and dingo/domestic dog hybrids), as sylvatic hosts for Australian Taenia hydatigena and T. ovis. International Journal for Parasitology, *v.:* 30 3 2, *p.:* 75 - 80, 2014

Palabras clave: Taenia ovis; T. hydatigena; Foxes; Dingoes; Australia

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

Medio de divulgación: Internet ; *Lugar de publicación:* Australia ; *ISSN:* 00207519 ; *DOI:* 10.1016/j.ijppaw.2014.03.001

http://www.sciencedirect.com/science/article/pii/S2213224414000066

Foxes (n = 499), shot during vertebrate pest control programs, were collected in various sites in the Australian Capital Territory (ACT), New South Wales (NSW) and Western Australia (WA). Wild dogs (dingoes (Canis lupus dingo) and their hybrids with domestic dogs) (n = 52) captured also as part of vertebrate pest control programs were collected from several sites in the ACT and NSW. The intestine from each fox and wild dog was collected, and all Taenia tapeworms identified morphologically were collected and identified to species based on the DNA sequence of the small subunit of the mitochondrial ribosomal RNA (rrnS) gene. Taenia species were recovered from 6.0% of the ACT/NSW foxes, 5.1% of WA foxes and 46.1% of ACT/NSW wild dogs. Taenia ovis was recovered from two foxes, 1/80 from Jugiong, NSW and 1/102 from Katanning, WA. We confirm from rrnS sequences the presence of T. ovis in cysts from hearts and diaphragms and Taeniahydatigena in cysts from livers of sheep in Australia. T.ovis was not recovered from any of the wild dogs examined but T. hydatigena were recovered from 4(8.3%) wild dogs and a single fox. With foxes identified as a definitive host for T. ovis in Australia, new control strategies to stop transmission of T. ovis to sheep need to be adopted.

Completo

JENKINS, D; LIEVAART, J; BOUFANA, B; LETT, W ; BRADSHAW, H; ARMUA-FERNANDEZ, M. T.

Echinococcus granulosus and other intestinal helminths: current status of prevalence and management in rural dogs of eastern Australia. Australian Veterinary Journal, *v.:* 92 8, *p.:* 292 - 298, 2014

Palabras clave: Rural dogs; Intestinal helminths; Echinococcus granulosus; Parasitology; Coproantigen; Australia

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

Medio de divulgación: Papel ; *Lugar de publicación:* Australia ; *ISSN:* 00050423 ; *DOI:* 10.1111/avj.12218

http://onlinelibrary.wiley.com/doi/10.1111/avj.12218/abstract

Ascertain the prevalence of intestinal helminths in rural dogs from eastern Australia and Tasmania. Identify farm management practices contributing to the perpetuation and transmission of Echinococcus granulosus. Helminth infection in dogs was determined microscopically through faecal flotation. Infection with E. granulosus was determined via faecal antigen-capture ELISA and coproPCR. Taeniid eggs were identified using molecular methods. Data on dog management and owner understanding of hydatid disease were collected via questionnaire. Faeces were collected from 1425 Australian rural dogs (1119 mainland; 306 Tasmania). Eggs of hookworms were most prevalent, up to 40.2%, followed by whipworms (Trichuris vulpis), up to 21.2%. Roundworms (Toxocara canis and Toxascaris leonine) were least common, up to 6.1%. Taeniid eggs were found in 11 dogs (5 Taenia pisiformis; 2 T. serialis; 4 T. hydatigena); 2 of the T. hydatigena-infected dogs were also E. granulosus coproantigen-positive. Of the 45 dogs found to be E. granulosus coproantigen-positive, 24 were in Tasmania, 16 in NSW, 3 in Victoria and 2 in Queensland. Three Tasmanian coproantigen ELISA-positive dogs were also coproPCR-positive. The most common dog ration was commercial dry food, but half the owners fed raw meat to their dogs and some fed offal of lambs (8.9%) or mutton (7.8%). More than half (69%) of owners weighed their dogs before deworming. Few dewormed their dogs often enough to ensure they remained cestode-free and owners hunting wildlife usually left carcases where they were shot. E. granulosus is still present in Australian rural dogs, including Tasmania, but at low levels. Owner behaviour perpetuates transmission of cestodes.

Completo

M. ISAKSSON; Å. HAGSTRöM; ARMUA-FERNANDEZ, M. T.; H. WAHLSTRöM; E. OLOF ÅGREN; A. MILLER; A. HOLMBERG; M. LUKACS; A. CASULLI; DEPLAZES, P.; M. JUREMALM

A semi-automated magnetic capture probe based DNA extraction and real-time PCR method applied in the Swedish surveillance of Echinococcus multilocularis in red fox (Vulpes vulpes) faecal samples.. Parasites and Vectors, *v.:* 5 583, 2014

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

Medio de divulgación: Internet ; *ISSN:* 17563305

Background Following the first finding of Echinococcus multilocularis in Sweden in 2011, 2985 red foxes (Vulpes vulpes) were analysed by the segmental sedimentation and counting technique. This is a labour intensive method and requires handling of the whole carcass of the fox, resulting in a costly analysis. In an effort to reduce the cost of labour and sample handling, an alternative method has been developed. The method is sensitive and partially automated for

detection of E. multilocularis in faecal samples. The method has been used in the Swedish E. multilocularis monitoring program for 2012¿2013 on more than 2000 faecal samples.Methods We describe a new semi-automated magnetic capture probe DNA extraction method and real time hydrolysis probe polymerase chain reaction assay (MC-PCR) for the detection of E. multilocularis DNA in faecal samples from red fox. The diagnostic sensitivity was determined by validating the new method against the sedimentation and counting technique in fox samples collected in Switzerland where E. multilocularis is highly endemic.ResultsOf 177 foxes analysed by the sedimentation and counting technique, E. multilocularis was detected in 93 animals. Eighty-two (88%, 95% C.I 79.8-93.9) of these were positive in the MC-PCR. In foxes with more than 100 worms, the MC-PCR was positive in 44 out of 46 (95.7%) cases. The two MC-PCR negative samples originated from foxes with only immature E. multilocularis worms. In foxes with 100 worms or less, (n¿=¿47), 38 (80.9%) were positive in the MC-PCR.The diagnostic specificity of the MC-PCR was evaluated using fox scats collected within the Swedish screening. Of 2158 samples analysed, two were positive. This implies that the specificity is at least 99.9% (C.I. =99.7 - 100).Conclusions The MC-PCR proved to have a high sensitivity and a very high specificity. The test is partially automated but also possible to perform manually if desired. The test is well suited for nationwide E. multilocularis surveillance programs where sampling of fox scats is done to reduce the costs for sampling and where a test with a high sensitivity and a very high specificity is needed.

THOMSON ISI SCOPUS

Completo

GUERRA, D.; ARMUA-FERNANDEZ, M. T.; SILVA, M.; BRAVO, I.; SANTOS, N.; DEPLAZES, P.; MADEIRA DE CARVALHO, L.M.
Taeniid species of the Iberian wolf (Canis lupus signatus) in Portugal with special focus on Echinococcus spp.. International Journal for Parasitology, *v.:* 2, *p.:* 50 - 53, 2013

Palabras clave: Echinococcus intermedius; Taenia spp; Iberian wolf; Portugal

Areas del conocimiento: Ciencias Naturales y Exactas / Ciencias Biológicas / Otros Tópicos Biológicos

Medio de divulgación: Internet ; *ISSN:* 00207519

Taeniid species represent relevant pathogens in human and animals, circulating between carnivorous definitive hosts and a variety of mammalian intermediate hosts. In Portugal, however, little is known about their occurrence and life cycles, especially in wild hosts. An epidemiological survey was conducted to clarify the role of the Iberian wolf as a definitive host for taeniid species, including Echinococcus spp. Wolf fecal samples (n = 68) were collected from two regions in Northern Portugal. Taeniid eggs were isolated through a sieving-flotation technique, and species identification was performed using multiplex-PCR followed by sequencing of the amplicons. Taenia hydatigena (in 11.8% of the samples), Taenia serialis (5.9%), Taenia pisiformis (2.9%), Taenia polyacantha (1.5%) and Echinococcus intermedius (Echinococcus granulosus 'pig strain', G7) (1.5%) were detected. This is the first study to characterize the taeniid species infecting the Portuguese Iberian wolf, with the first records of T. polyacantha and E. intermedius in this species in the Iberian Peninsula. Iberian wolves can be regarded as relevant hosts for the maintenance of the wild and synanthropic cycles of taeniids in Portugal.

THOMSON ISI SCOPUS

Completo

ARMUA-FERNANDEZ, M. T.; Nariaki Nonaka; Tatsuya Sakurai; Seita Nakamura; GOTTSTEIN, B.; DEPLAZES, P.; PHIRI, I.G.K.; KATAKURA, K.; OKU, Y.
Development of PCR/Dot blot assay for specific detection and differentiation of taeniid cestode eggs in canids. . Parasitology International, v.: 60 1, p.: 84 - 89, 2011

Palabras clave: Taeniid cestode eggs; Species-specific oligonucleotide probes; PCR/dot blot assay

Areas del conocimiento: Ciencias Naturales y Exactas / Ciencias Biológicas / Otros Tópicos Biológicos

Medio de divulgación: Internet ; ISSN: 13835769

We report the development of a colourimetric PCR/dot blot assay targeting the mitochondrial gene NADH dehydrogenase subunit 1 (nad1) for differential diagnosis of taeniid eggs. Partial sequences of the cestode nad1 gene were aligned and new primers were designed based on conserved regions. Species-specific oligonucleotide probes (S-SONP) for canine taeniid cestodes were then designed manually based on the variable region between the conserved primers. Specifically, S-SONP were designed for the Taenia crassiceps, T. hydatigena, T. multiceps, T. ovis, T. taeniaeformis, Echinococcus granulosus (genotype 1), E. multilocularis and E. vogeli. Each probe showed high specificity as no cross-hybridisation with any amplified nad1 fragment was observed. We evaluated the assay using 49 taeniid egg-positive samples collected from dogs in Zambia. DNA from 5 to 10 eggs was extracted in each sample. Using the PCR/dot blot assay, the probes successfully detected PCR products from T. hydatigena in 42 samples, T. multiceps in 3 samples, and both species (mixed infection) in the remaining 4 samples. The results indicate that the PCR/dot blot assay is a reliable alternative for differential diagnosis of taeniid eggs in faecal samples.

THOMSON ISI SCOPUS

Completo

Nariaki Nonaka; SANO, T.; INOUE, T.; ARMUA, M.T.; FUKUI, D.; KATAKURA, K.; OKU, Y.
Multiplex PCR system for identifying the carnivore origins of faeces for an epidemiological study on Echinococcus multilocularis in Hokkaido, Japan. Parasitology Research, *v.:* 106 1, *p.:* 75 - 83, 2009

Palabras clave: carnivore faeces; Multiplex PCR; Echinococcus multilocularis eggs

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Medio de divulgación: Internet ; *ISSN:* 09320113

A multiplex PCR system was developed to identify the carnivore origins of faeces collected in Hokkaido, Japan, for epidemiological studies on Echinococcus multilocularis. Primers were designed against the D-loop region of mitochondrial DNA. Two separate primer mixtures (mix 1, specific forward primers to fox, raccoon dog and dog, and a universal reverse primer [prH]; and mix 2, specific forward primers to cat, raccoon and weasels and prH) were used so that the PCR products (160 bp, fox and cat; 240 bp, raccoon dog and raccoon; and 330 bp, dog and weasel) were distinguished by size. The multiplex PCR exhibited no cross-reactivity between carnivore species and did not amplify DNA from rodent prey. When 270 field-collected faeces were examined, 250 showed single PCR products belonging to specific target sizes, suggesting successful carnivore identification for 92.6% of samples. Taeniid eggs were detected in 11.1% of samples and coproantigen in 30.4%; whereas the prevalences of taeniid eggs and coproantigen were 12.9% and 34.0% in fox faeces, and 0% and 26.3% in cat faeces, respectively. These results suggest that the prevalence in different target animals can be evaluated individually and precisely using multiplex PCR system.

Artículos aceptados

Trabajos en eventos

Resumen expandido

FéLIX, M. L.; CARVALHO, L.; MAYA, L.; ARMUA, M.T.; DE SOUZA, C. G.; GONZáLEZ, E.M.; COLINA, R.; VENZAL, J. M.
Estacionalidad de Ixodes auritulus y su infección con Borrelia burgdorferi sensu lato en las sierras del este de Uruguay , 2015

Evento: Nacional , Jornadas Técnicas Veterinarias , Montevideo , 2015

Palabras clave: Ixodes auritulus; Borrelia burgdorferi sensu lato

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias

Medio de divulgación: Otros;

Resumen expandido

CARVALHO, L.; SOSA, N; MENONI, A.; ARMUA, M.T.; FéLIX, M. L.; VENZAL, J. M.
Diagnóstico molecular de Hepatozoon spp. (Apicomplexa: Hepatozoidae) en carnívoros domésticos y silvestres de Uruguay , 2015

Evento: Nacional , Jornadas Técnicas Veterinarias , Montevideo , 2015

Palabras clave: Hepatozoon spp.; carnívoros salvajes; carnívoros domésticos; diagnóstico molecular

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Medio de divulgación: Otros;

Resumen expandido

ARMUA, M.T.; CASTRO, O.; CORREA, O.; ALFONSO, G.; VELáZQUEZ, D.; MANGOLD, A.; CARVALHO, L.; VENZAL, J. M.
Identificación molecular de una población de Lymnaea neotropica actuando como hospedador intermediario de Fasciola hepatica en un establecimiento de Tacuarembó, Uruguay , 2015

Evento: Nacional , Jornadas Técnicas Veterinarias , 2015

Palabras clave: Lymnaea neotropica; Identificación molecular ; Uruguay

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Medio de divulgación: Otros;

Resumen

ARMUA-FERNANDEZ, M. T.; FEDERER, K; WENKER, C; HOBY, S; DEPLAZES, P.
In vivo viability testing of Echinococcus multilocularis eggs in a rodent model after different thermo treatments [poster] , 2014

Evento: *Regional , Innovation for the Management of Echinococcosis , Besançon, Francia , 2014*

Palabras clave: *In vivo viability; Echinococcus multilocularis eggs; thermo treatment*

Areas del conocimiento: *Ciencias Médicas y de la Salud / Otras Ciencias Médicas / Otras Ciencias Médicas*

Medio de divulgación: *Papel;*

Resumen

ARMUA-FERNANDEZ, M. T.; SCHWEIGER, A; EICHENBERGER, R; DEPLAZES, P.

Study of resistance of Echinococcus multilocularis oncosphere invasion in a rat model [poster] , 2014

Evento: Regional , Innovation for the Management of Echinococcosis. , Besançon, Francia , 2014

Palabras clave: rat model; Echinococcus multilocularis

Areas del conocimiento: Ciencias Médicas y de la Salud / Otras Ciencias Médicas / Otras Ciencias Médicas

Medio de divulgación: Papel;

Resumen

FEDERER, K; ARMUA-FERNANDEZ, M. T.; WENKER, C; HOBY, S; DEPLAZES, P.

Viability testing of Echinococcus multilocularis eggs in an in vivo mouse model after different thermo-treatments [poster] , 2014

Evento: Regional , Paratrop 2014 , Zurich , 2014

Palabras clave: in vivo viability test; Echinococcus multilocularis eggs; thermo-treatment

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Biotecnología relacionada con la Salud

Medio de divulgación: Otros;

Financiación/Cooperación: Universidad de Zurich / Otra

Resumen

ARMUA-FERNANDEZ, M. T.; SCHWEIGER, A; EICHENBERGER, R; DEPLAZES, P.

Study of factors influencing the resistance to Echinococcus multilocularis oncosphere invasion in a rat model [presentación oral] , 2014

Evento: Regional , Paratrop 2014 , Zurich2014

Palabras clave: Echinococcus multilocularis; oncosphere invasion; rat model

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Biotecnología relacionada con la Salud

Medio de divulgación: Otros;

Resumen

JENKINS, D; LIEVAART, J; BOUFANA, B; LETT, W ; BRADSHAW, H; ARMUA-FERNANDEZ, M. T.

Echinococcus granulosus in eastern Australia, current role of domestic dogs and wildlife: Implications for control [presentación oral] , 2013

Evento: Internacional , The 25th World Congress of Echinococcosis , Khartoum, Sudan , 2013

Areas del conocimiento: Ciencias Naturales y Exactas / Otras Ciencias Naturales / Otras Ciencias Naturales

Medio de divulgación: Papel;

Resumen

ARMUA-FERNANDEZ, M. T.; SCHWEIGER, A; EICHENBERGER, R; DEPLAZES, P.

Development of a rat model for the study of oncosphere invasion [presentación oral] , 2013

Evento: Internacional , The 25th World Congress of Echinococcosis , Khartoum, Sudan , 2013

Areas del conocimiento: Ciencias Naturales y Exactas / Otras Ciencias Naturales / Otras Ciencias Naturales

Resumen

ARMUA-FERNANDEZ, M. T.; SCHWEIGER, A; EICHENBERGER, R; DEPLAZES, P.

Development of a rat model for the study of alveolar echinococcosis and the different factors that influence the success of the infection [presentación oral] , 2013

Evento: Internacional , 24th International Conference of the World Association for the Advancement of Veterinary Parasitology , Perth, Western Australia , 2013

Areas del conocimiento: Ciencias Naturales y Exactas / Otras Ciencias Naturales / Otras Ciencias Naturales

Resumen

ARMUA-FERNANDEZ, M. T.; CASTRO, O.F.; CRAMPET, A.; BARTZABAL, A.; HOFMANN-LEHMANN, R.; GRIMM, F.; DEPLAZES, P.

Cystic echinococcosis in an Uruguayan domestic cat caused by Echinococcus granulosus sensu stricto (genotype 1) [poster] , 2013

Evento: Internacional , 24th International Conference of the World Association for the Advancement of Veterinary Parasitology , Perth, Western Australia , 2013

Areas del conocimiento: Ciencias Naturales y Exactas / Otras Ciencias Naturales / Otras Ciencias Naturales

Resumen

VOGT, C; ARMUA-FERNANDEZ, M. T.; DEPLAZES, P.; AGUILAR, C; ACKERMANN , M; EICHWALD, C

Use of recombinant Bacillus subtilis spores as a safe carrier for enteric immunization against Echinococcus granulosus in a mice mode [poster] , 2013

Evento: Local , Swiss society of microbiology, 71st annual congress , Interlaken, Switzerland , 2013

Areas del conocimiento: Ciencias Naturales y Exactas / Otras Ciencias Naturales / Otras Ciencias Naturales

Resumen

ARMUA-FERNANDEZ, M. T.

Reverse line blot for detection of canine cestodiosis , 2010

Evento: Regional , The 56th Joint Annual Meeting of Japanese Society of Parasitology and Northern Branch of Japanese Society of Animal Health , Sapporo , 2010

Areas del conocimiento: Ciencias Naturales y Exactas / Ciencias Biológicas / Otros Tópicos Biológicos

Medio de divulgación: Papel;

Financiación/Cooperación: Hokkaido University / Apoyo financiero

Resumen

ARMUA-FERNANDEZ, M. T.

Simultaneous detection and discrimination of taeniid cestodes in canids by Reverse line blotting [poster]. , 2010

Evento: Internacional , The 2nd International Young Researcher Seminar in Zoonosis Control. , Sapporo , 2010

Areas del conocimiento: Ciencias Naturales y Exactas / Ciencias Biológicas / Otros Tópicos Biológicos

Medio de divulgación: Papel;

Resumen

ARMUA-FERNANDEZ, M. T.

Simultaneous detection and discrimination of taeniid cestodes in canids by reverse line blotting , 2010

Evento: Internacional , ICOPA XII , Melbourne, Australia , 2010

Areas del conocimiento: Ciencias Naturales y Exactas / Ciencias Biológicas / Otros Tópicos Biológicos

Medio de divulgación: CD-Rom;

Resumen

ARMUA-FERNANDEZ, M. T.; Nariaki Nonaka; Tatsuya Sakurai; GOTTSTEIN, B.; DEPLAZES, P.; KATAKURA, K.; OKU, Y.

PCR/dot blot for specific detection and differentiation of taeniid cestode eggs in canids [presentación oral] , 2010

Evento: Internacional , 4th Wildlife Society of Zoo and Wildlife Medicine International Meeting. , Kuala Lumpur, Malasia , 2010

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

Resumen

ARMUA-FERNANDEZ, M. T.; Nariaki Nonaka; Tatsuya Sakurai; GOTTSTEIN, B.; DEPLAZES, P.; KATAKURA, K.; OKU, Y.

DNA dot blot assay for the differentiation of taeniid cestodes in canids [poster] , 2009

Evento: Internacional , XXII International Congress of Hydatidology , Colonia, Uruguay

Areas del conocimiento: Ciencias Médicas y de la Salud / Biotecnología de la Salud / Tecnologías que involucran la identificación de ADN, proteínas y enzimas

Formación de RRHH

Tutorías concluidas

Otras

Otras tutorías/orientaciones

Epidemiologie der alveolären Echinococcose in Schweizer Zoos (Epidemiología de la echinococcosis alveolar en Zoológicos suizos) , 2013

Tipo de orientación: Asesor/Orientador

Nombre del orientado: Karin Federer

University of Zurich , Suiza

Palabras clave: Echinococcosis alveolar; zoológicos suizos; primates

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Medio de divulgación: Papel, *Pais/Idioma:* Suiza/Alemán

Otras tutorías/orientaciones

The sylvatic and synanthropic cycles of Echinococcus spp., Taenia spp. and Toxocara spp. in Portugal: coprologic and molecular diagnosis in Canids , 2012

Tipo de orientación: Asesor/Orientador

Nombre del orientado: Diogo Ribeiro Almeida Guerra

University of Zurich , Suiza

Palabras clave: Taenia spp.; Echinococcus spp.; carnivore faeces; Portugal

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Medio de divulgación: Papel, *Pais/Idioma:* Suiza/Inglés

Tutorías en marcha

Posgrado

Tesis de maestría

Detección molecular de Ehrlichia y Anaplasma en garrapatas de interés sanitario para humanos en Uruguay , 2015

Tipo de orientación: Cotutor en pie de igualdad

Nombre del orientado: María Laura Felix Rivero

Facultad de Veterinaria - UDeLaR , Uruguay , Maestría en Salud Animal

Palabras clave: Ehrlichia spp.; Anaplasma spp; Ixódidos

Areas del conocimiento: Ciencias Agrícolas / Ciencias Veterinarias / Ciencias Veterinarias / Parasitología

Pais/Idioma: Uruguay/Español

Indicadores de producción

Producción bibliográfica	*31*
Artículos publicados en revistas científicas	*14*
Completo (Arbitrada)	14
Artículos aceptados para publicación en revistas científicas	*0*
Trabajos en eventos	*17*
Resumen (No Arbitrada)	14
Resumen expandido (No Arbitrada)	3
Libros y capítulos de libros publicados	*0*

Textos en periódicos	*0*
Documentos de trabajo	*0*
Producción técnica	*0*
Productos tecnológicos	*0*
Procesos o técnicas	*0*
Trabajos técnicos	*0*
Otros tipos	*0*
Evaluaciones	*0*
Formación de RRHH	*3*
Tutorías/Orientaciones/Supervisiones concluidas	*2*
Otras tutorías/orientaciones	2
Tutorías/Orientaciones/Supervisiones en marcha	*1*
Tesis de maestría	1

Sistema Nacional de Investigadores