CEDOC Informativo/Newsletter

N. 87 - Febrero/February 2011

Centro de Documentación / Documentation Center

Objetivos/ Objectives

Identificar y atender las necesidades de información, adquisición, organización, almacenamiento, generación, uso y difusión de la información en salud pública veterinaria y proveer recursos bibliográficos técnicos-científicos al equipo de profesionales de la unidad y a los usuarios externos.

Identify and take care of the needs of information, acquisition, organization, storage, generation, use and diffusion of the information in veterinary public health and provide technical scientific bibliographical resources to the professional staff of the unit and to the users external.

Temas de interés general / Subjects of general interest

Sala de Situação em Saúde do Ministério da Saúde - Brasil

A Sala de Situação em Saúde do Ministério da Saúde tem por objetivo disponibilizar informações, de forma executiva e gerencial, para subsidiar a tomada de decisão, a gestão, a prática profissional e a geração de conhecimento. Demonstra a atuação governamental no âmbito do SUS, fornece referencial para projeções e inferências setoriais, além de contribuir para a transparência acerca das ações desenvolvidas na área da saúde.

É composta por quatro módulos:

Socioeconômico – Apresenta aspectos socioeconômicos, demográficos e territoriais que permitem identificar a situação conjuntural brasileira. Reúne dados políticos de estados e municípios, bem como as representações no poder Legislativo e sua atuação na área da saúde, por meio de emendas e convênios.

Ações em saúde – Possibilita o acompanhamento das metas físicas, coberturas e repasses financeiros relacionados às principais ações e programas do Ministério da Saúde.

Situação de saúde – Disponibiliza indicadores epidemiológicos e operacionais relacionados a doenças e agravos caracterizados como problema de saúde pública. Auxilia na elaboração de análises contextuais utilizadas na formulação de políticas e na avaliação de intervenções específicas no campo da saúde.

Gestão em saúde – Aborda a execução orçamentária do Ministério da Saúde, por unidade orçamentária, programas e ações. Informa os limites financeiros por empenho e por fontes de recurso. Detalha a situação de convênios e apresenta as transferências fundo a fundo, particularizando os repasses financeiros. Exibe informações sobre estabelecimentos e profissionais de saúde em atuação no SUS. Mostra indicadores de processo e resultados do monitoramento do Pacto pela Saúde. Disponibiliza os dados referentes ao processo de gestão, à descentralização e ao controle social.

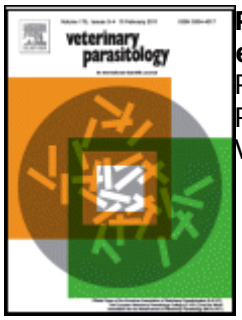
As informações são apresentadas com base territorial municipal, que traz como primeira opção a capital do estado. Também podem ser obtidas consolidações estaduais, por regiões geográficas ou por recortes

definidos nas Políticas de Saúde.

http://189.28.128.178/sage/

Informaciones disponibles en formato electrónico / Information available in electronic format

Enfermedad de Chagas / Chagas Disease



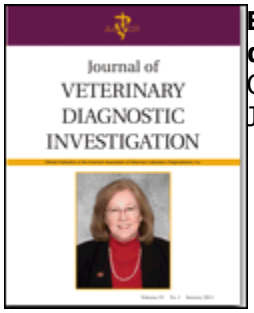
Prevalence of trypanosome infections in dogs from Chagas disease endemic regions in Panama, Central America
Pineda V, Saldaña A, Monfante I, Santamaría A, Gottdenker NL, Yabsley MJ, Rapoport G, Calzada JE
Vet Parasitol. 2011 Jan

The prevalence of canine trypanosomosis was investigated in two Chagas disease endemic rural communities located in the central region of Panama. Serologic tests for Trypanosoma cruzi infection revealed a prevalence of 11.1%. Hemocultures coupled with PCR analysis demonstrated a Trypanosoma rangeli infection rate of 5.1%. An overall trypanosome infection index of 16.2% (16/99) was detected in this canine population. One dog had a mixed infection of T. cruzi and T. rangeli. Six of the trypanosome-infected dogs belong to people who were diagnosed of Chagas disease. We conclude that dogs from this rural area of Panama are frequently infected with trypanosomes transmitted by the sylvatic vector, Rhodnius pallescens, and suggest that dogs are important in the peridomestic transmission cycle of trypanosomes as reservoirs and hosts. The epidemiological implications of these findings are discussed.
Text in English

Fiebre Aftosa / Foot and Mouth Disease

The current state of vaccines used in the field for foot and mouth disease virus in China
Li Z, Liu J
Expert Rev Vaccines. 2011 Jan; 10 (1): 13-5

The vaccine is a fundamental component of strategies aimed at China's control and eradication of FMD. The inactivated vaccine remains the most widely used FMD vaccine in the world. However, some measures need to be strengthened to ensure the quality and safety of the vaccine.
Text in English
http://www.expert-reviews.com/doi/pdf/10.1586/erv.10.146

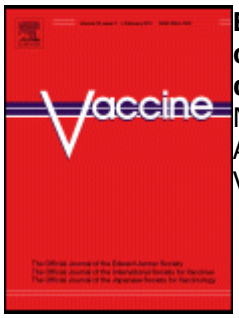


Epidemic and economic impacts of delayed detection of foot-and-mouth disease: a case study of a simulated outbreak in California
Carpenter TE, O'Brien JM, Hagerman AD, McCarl BA
J Vet Diagn Invest. 2011 Jan; 23 (1): 26-33

The epidemic and economic impacts of Foot-and-mouth disease virus (FMDV) spread and control were examined by using epidemic simulation and economic (epinomic) optimization models. The simulated index herd was a ≥2,000 cow dairy located in California. Simulated disease spread was limited to California; however, economic impact was assessed throughout the United States and included international trade effects. Five index case detection delays were examined, which ranged from 7 to 22 days. The simulated median number of infected premises (IP) ranged from approximately 15 to 745, increasing as the detection delay increased from 7 to 22 days. Similarly, the median number of herds under quarantine increased from approximately 680 to 6,200, whereas animals slaughtered went from approximately 8,700 to 260,400 for detection delays of 7-22 days, respectively. The median economic impact of an FMD outbreak in California was estimated to result in national agriculture welfare losses of $2.3-$69.0 billion as detection delay increased from 7 to 22 days, respectively. If assuming a detection delay of 21 days, it was estimated that, for every additional hr of delay, the impact would be an additional approximately 2,000 animals slaughtered and an additional economic loss of $565 million. These findings underline the critical importance that the United States has an effective early detection system in place before an introduction of FMDV if it hopes to avoid dramatic losses to both livestock and the economy.

Text in English

http://fazd.tamu.edu/2011/01/files/2011/01/Epidemic-and-economic-impacts-of-delayed-detection-of-foot-and-mouth-disease.pdf



Evaluation of cross-protection between O(1) Manisa and O(1) Campos in cattle vaccinated with foot-and-mouth disease virus vaccine incorporating different payloads of inactivated O(1) Manisa antigen

Nagendrakumar SB, Srinivasan VA, Madhanmohan M, Yuvaraj S, Parida S, Di Nardo A, Horsington J, Paton DJ

Vaccine. 2011 Jan

Serology is used to predict vaccine induced protection against challenge with a heterologous strain of the same serotype of foot-and-mouth disease virus (FMDV). To evaluate the accuracy of such predictions, we compared the protection afforded to cattle vaccinated with the O(1) Manisa strain of FMDV against challenge with either a homologous (O(1) Manisa) or a heterologous strain (O(1) Campos). Serology by virus neutralization test (VNT) using O(1) Manisa antiserum predicted an acceptable protection against such a challenge. Two experiments were carried out to compare the results for consistency. A total of 78 naïve cattle were vaccinated with different antigen payloads (60-0.94µg) of O(1) Manisa. They were challenged by intradermolingual inoculation with live FMDV, either O (1) Manisa or O(1) Campos. Unvaccinated naïve control cattle (n=20) were also challenged with either the O(1) Manisa or O(1) Campos viruses and all developed generalized FMD. The protection results for the vaccinated cattle revealed that higher payloads of O(1) Manisa vaccine were needed to protect against heterologous challenge compared to that for homologous challenge. The 50% protective dose (PD(50)) values for the vaccine in experiments 1 and 2 were found to be 28.78 and 9.44 for the homologous challenge and 3.98 and 5.01 for heterologous challenge. Furthermore, protection against O (1) Campos required a higher level of vaccine-induced antibody against this virus compared to the level of O(1) Manisa neutralizing antibody associated with protection against homologous challenge. The 50% protective level of in vitro neutralizing antibody was found to be log(10)1.827 for O(1) Campos and log (10)0.954 for O(1) Manisa based on O(1) Manisa based virus neutralization test.

Text in English (article in press)

Inhibitors of foot and mouth disease virus targeting a novel pocket of the RNA-dependent RNA polymerase

Durk RC, Singh K, Cornelison CA, Rai DK, Matzek KB, Leslie MD, Schafer E, Marchand B, Adedeji A, Michailidis E, Dorst CA, Moran J, Pautler C, Rodriguez LL, McIntosh MA, Rieder E, Sarafianos SG

PLoS One. 2010 Dec; 5 (12): e15049

BACKGROUND: Foot-and-Mouth Disease Virus (FMDV) is a picornavirus that infects cloven-hoofed animals and leads to severe losses in livestock production. In the case of an FMD outbreak, emergency vaccination requires at least 7 days to trigger an effective immune response. There are currently no approved inhibitors for the treatment or prevention of FMDV infections.

METHODOLOGY/PRINCIPAL FINDINGS: Using a luciferase-based assay we screened a library of compounds and identified seven novel inhibitors of 3Dpol, the RNA-dependent RNA polymerase of FMDV. The compounds inhibited specifically 3Dpol (IC(50)s from 2-17 μM) and not other viral or bacterial polymerases. Enzyme kinetic studies on the inhibition mechanism by compounds 5D9 and 7F8 showed that they are non-competitive inhibitors with respect to NTP and nucleic acid substrates. Molecular modeling and docking studies into the 3Dpol structure revealed an inhibitor binding pocket proximal to, but distinct from the 3Dpol catalytic site. Residues surrounding this pocket are conserved among all 60 FMDV subtypes. Site directed mutagenesis of two residues located at either side of the pocket caused distinct resistance to the compounds, demonstrating that they indeed bind at this site. Several compounds inhibited viral replication with 5D9 suppressing virus production in FMDV-infected cells with EC(50)= 12 μM and EC(90)= 20 μM).

SIGNIFICANCE: We identified several non-competitive inhibitors of FMDV 3Dpol that target a novel binding pocket, which can be used for future structure-based drug design studies. Such studies can lead to the discovery of even more potent antivirals that could provide alternative or supplementary options to contain future outbreaks of FMD.

Text in English

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3006429/pdf/pone.0015049.pdf

Hidatidosis / Hydatidosis

El Proyecto Subregional Cono Sur de Control y Vigilância de la Hidatidosis

Irabedra P, Salvatella R

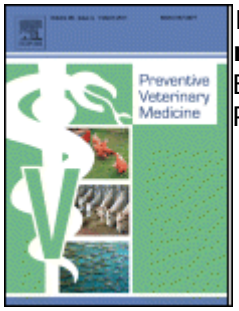
Rev Peru Med Exp Salud Publica. 2010; 27(4): 598-603

El Proyecto Subregional Cono Sur de Control y Vigilancia de la Hidatidosis: Argentina, Brasil, Chile y Uruguay, es una herramienta conjunta y colaborativa de los países para promover la implantación o el fortalecimiento de los programas de control. Se hace una descripción de los antecedentes, de los aspectos institucionales que regulan su organicidad y funcionamiento y de las líneas de acción definidas en el proyecto técnico operativo. Se destaca los logros obtenidos a través de los Proyectos de Cooperación Técnica entre Países así como el desarrollo de enfoques integrales e innovadores y la formación de recursos humanos de los programas de control. Algunos de los desafíos futuros son: lograr la sustentabilidad del Proyecto, implementar los grupos técnicos de análisis y evaluación a solicitud de los países, mejorar los sistemas de información regionales, continuar las actividades de capacitación y entrenamiento de recursos humanos y la expansión y fortalecimiento de la cooperación técnica entre países.

Text in Spanish

http://www.ins.gob.pe/insvirtual/images/artrevista/pdf/rpmesp2010.v27.n4.a17.pdf

Influenza Aviar / Avian Influenza



Integrating surveillance and biosecurity activities to achieve efficiencies in national avian influenza programs
Bunn D, Beltran-Alcrudo D, Cardona C
Prev Vet Med. 2011 Mar; 98 (4): 292-4

Based on the HPAI experience, efforts to improve global capacity to prevent and control zoonotic diseases should considernewand more efficient models for integrating prevention and surveillance activities.
Text in English

Detection of resistance mutations to antivirals oseltamivir and zanamivir in avian influenza a viruses isolated from wild birds
Orozovic G, Orozovic K, Lennerstrand J, Olsen B
PLoS One. 2011 Jan; 6 (1): e16028

The neuraminidase (NA) inhibitors oseltamivir and zanamivir are the first-line of defense against potentially fatal variants of influenza A pandemic strains. However, if resistant virus strains start to arise easily or at a high frequency, a new anti-influenza strategy will be necessary. This study aimed to investigate if and to what extent NA inhibitor-resistant mutants exist in the wild population of influenza A viruses that inhabit wild birds. NA sequences of all NA subtypes available from 5490 avian, 379 swine and 122 environmental isolates were extracted from NCBI databases. In addition, a dataset containing 230 virus isolates from mallard collected at Ottenby Bird Observatory (Öland, Sweden) was analyzed. Isolated NA RNA fragments from Ottenby were transformed to cDNA by RT-PCR, which was followed by sequencing. The analysis of genotypic profiles for NAs from both data sets in regard to antiviral resistance mutations was performed using bioinformatics tools. All 6221 sequences were scanned for oseltamivir- (I117V, E119V, D198N, I222V, H274Y, R292K, N294S and I314V) and zanamivir-related mutations (V116A, R118K, E119G/A/D, Q136K, D151E, R152K, R224K, E276D, R292K and R371K). Of the sequences from the avian NCBI dataset, 132 (2.4%) carried at least one, or in two cases even two and three, NA inhibitor resistance mutations. Swine and environmental isolates from the same data set had 18 (4.75%) and one (0.82%) mutant, respectively, with at least one mutation. The Ottenby sequences carried at least one mutation in 15 cases (6.52%). Therefore, resistant strains were more frequently found in Ottenby samples than in NCBI data sets. However, it is still uncertain if these mutations are the result of natural variations in the viruses or if they are induced by the selective pressure of xenobiotics (e.g., oseltamivir, zanamivir).
Text in English
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3017088/pdf/pone.0016028.pdf

Inocuidad de los Alimentos / Food Safety

Detection of quinolone-resistance mutations in Salmonella spp. strains of epidemic and poultry origin
Souza RB, Magnani M, Ferrari RG, Kottwitz LBM, Sartori D, Tognim MCB et al .
Braz J Microbiol. 2011 Mar; 42 (1): 211-215

Mutations into codons Aspartate-87 (62%) and Serine-83 (38%) in QRDR of *gyr*A were identified in 105 *Salmonella* strains resistant to nalidixic acid (94 epidemic and 11 of poultry origin). The results show a high incidence of mutations associated to quinolone resistance but suggest association with others mechanisms of resistance.
Text in English
http://www.scielo.br/pdf/bjm/v42n1/v42n1a26.pdf

La seguridad alimentaria durante el año 2010. La investigación e innovación y las novedades en materia legislativa han sido dos de los grandes avances en seguridad alimentaria
Pelayo M
Eroski Consumer
Enero 2011

La investigación, el desarrollo y la innovación han sido uno de los principales motores de la seguridad de los alimentos durante el año que está a punto de finalizar. Alimentación y bebidas es uno de los sectores que más inversión ha destinado en I+D+i, enfocado, sobre todo, a la salud de los consumidores. Las nuevas tecnologías desarrolladas para el campo de la seguridad alimentaria o aplicadas en él desde otros ámbitos son una excelente herramienta de producción, control y gestión. Las ventajas de este desarrollo aportan mayor información de los contaminantes de los alimentos, facilitan la gestión de las alertas y riesgos alimentarios y ayudan en la creación de nuevas normas que garantizan disponer de alimentos seguros.
Text in Spanish
http://www.consumer.es/seguridad-alimentaria/sociedad-y-consumo/2010/12/30/198039.php

Rabia / Rabies

Rabies, Still Neglected after 125 Years of Vaccination
Bourhy H, Dautry-Varsat A, Hotez PJ, Salomon J
PLoS Negl Trop Dis. 2010 Nov; 4 (11): e839

Text in English
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2994912/pdf/pntd.0000839.pdf

Zoonosis Parasitarias / Parasitic Zoonoses

REVISTA PERUANA DE MEDICINA EXPERIMENTAL Y SALUD PÚBLICA

Las zoonosis parasitarias: problema de salud pública en el Perú
Naquira C
Rev Peru Med Exp Salud Publica. 2010; 27(4): 494-97

En el Perú, las zoonosis parasitarias son problemas de importancia en la salud pública y en la economía, entre las más importantes son: la hidatidosis o equinococcosis quística, la cisticercosis y la fasciolosis; sin embargo, la toxocarosis está siendo objeto cada vez de mayor interes.

Text in Spanish
http://www.ins.gob.pe/insvirtual/images/artrevista/pdf/rpmesp2010.v27.n4.a1.pdf

Organización Panamericana de la Salud
Oficina Regional de la Organización Mundial de la Salud
Salud Pública Veterinaria
Centro Panamericano de Fiebre Aftosa

Pan American Health Organization
Regional Office of the World Health Organization
Veterinary Public Health
Pan American Foot and Mouth Disease Center

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apimente@panaftosa.ops-oms.org