



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



El Curso Interactivo de Simulacros en Influenza Aviar orienta a los responsables de la salud animal en la prevención, control y erradicación de la Influenza Aviar de Alta Patogenicidad (IAAP) e Influenza Aviar de Baja Patogenicidad (IABP), mediante la revisión y el ejercicio de medidas zoonositarias básicas que se deben llevar a cabo en terreno cuando se diagnostica esta enfermedad.

En este curso se revisará los distintos tipos de simulacro en sanidad animal, como parte de las estrategias y respuestas que la Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO) recomienda ante la amenaza de esta enfermedad a nivel mundial.

El objetivo de este curso es que los responsables de la salud animal en un país o región, sepan como actuar en caso de que se presente una emergencia de influenza aviar, a fin de aprender y ejercitar conductas o hábitos adecuados de respuesta.

<http://www.educa-consultores.com.mx/fao/portada/index.htm>

Informaciones disponibles en formato electrónico / Information available in electronic format

Encefalopatía Espongiforme Bovina (BSE) / Bovine Spongiform Encephalopathy (BSE)



Risks of transmitting ruminant spongiform encephalopathies (prion diseases) by semen and embryo transfer techniques

Wrathall AE, Holyoak GR, Parsonson IM, Simmons HA
Theriogenology 2008

Early experiments suggested that scrapie transmission via sheep embryos was a possibility, and gave rise to much controversy. However, when account is taken of the complex genetic effects on ovine susceptibility to scrapie, and of the several different scrapie strains with different clinical and pathological effects, the overall conclusion now is that transmission of classical scrapie by embryo transfer is very unlikely if appropriate precautions are taken. Recent embryo transfer studies have confirmed this. Other studies in sheep have shown that from about the middle of pregnancy the placental trophoblast is liable to scrapie infection in genetically susceptible ewes if the fetus is also susceptible. Since the contrary is also true, use of resistant ewes as embryo recipients could add to the safety of the embryo transfer, at least for classical scrapie. There has been little recent research on scrapie transmission via semen in sheep, and, with hindsight, the early studies, though negative, were inadequate. There is scant information on scrapie transfer via goat semen or embryos, although one study did find that bovine spongiform encephalopathy (BSE) was not transmitted via goat embryos. In cattle it has been shown that, if appropriate precautions are taken, the risks of transmitting BSE via semen and in vivo-derived embryos are negligible, and this conclusion has gained worldwide acceptance. Research on TSE transmission via reproductive technologies in deer has not yet been done, but information on the pathogenesis and epidemiology of chronic wasting disease (CWD) of deer, and on transmission risks in other species, provides optimism that transmission of CWD via semen and embryos of deer is unlikely. The presence of TSE infectivity in blood and various other tissues of infected animals, particularly sheep, gives rise to concerns that certain biological products currently used in reproductive technologies, e.g. pituitary gonadotrophins for superovulation, and certain tissue and blood products used in semen and embryo transfer media, could carry TSE infectivity. Instruments such as laparoscopes used for insemination, and for collection and transfer of embryos, especially in small ruminants, are also a concern because effective decontamination can be very difficult.

Text in English (article in press)

Fiebre Aftosa / Foot-and-Mouth Disease



Inhibition of foot-and-mouth disease virus replication in vitro and in vivo by small interfering RNA

Pengyan W, Yan R, Zhiru G, Chuangfu C
Virol J. 2008 Jul; 5 (1): 86

ABSTRACT: By using bioinformatics computer programs, all foot-and-mouth disease virus (FMDV) genome sequences in public-domain databases were analyzed. Based on the results of homology analysis, 2 specific small interfering RNA (siRNA) targeting homogenous 3D and 2B1 regions of 7 serotypes of FMDV were prepared and 2 siRNA-expression vectors, pSi-FMD2 and pSi-FMD3, were constructed. The siRNA-expressing vectors were used to test the ability of siRNAs to inhibit virus replication in baby hamster kidney (BHK-21) cells and suckling mice, a commonly used small animal model. The results demonstrated that transfection of BHK-21 cells with siRNA-expressing plasmids significantly weakened the cytopathic effect (CPE). Moreover, BHK-21 cells transiently transfected with short hairpin RNA (shRNA)-expressing plasmids were specifically resistant to the infection of the FMDV serotypes A, O, and Asia I and the antiviral effects persisted for almost 48 hours. We measured the viral titers, the 50% tissue culture infective dose (TCID₅₀) in cells transfected with anti-FMDV siRNAs was found to be lower than that of the control cells. Furthermore, subcutaneous injection of siRNA-expressing plasmids in the neck of the suckling mice made them less susceptible to infection with A, O, and Asia I serotypes of FMDV.

Text in English (article in press)

<http://www.virologyj.com/content/pdf/1743-422x-5-86.pdf>



Multiplexed molecular assay for rapid exclusion of foot-and-mouth disease

Lenhoff RJ, Naraghi-Arani P, Thissen JB, Olivas J, Carillo AC, Chinn C, Rasmussen M, Messenger SM, Suer LD, Smith SM, Tammero LF, Vitalis EA, Slezak TR, Hullinger PJ, Hindson BJ, Hietala SK, Crossley BM, McBride MT
J Virol Methods 2008 Jul

A nucleic acid-based multiplexed assay was developed that combines detection of foot-and-mouth disease virus (FMDV) with rule-out assays for two other foreign animal diseases and four domestic animal diseases that cause vesicular or ulcerative lesions indistinguishable from FMDV infection in cattle, sheep and swine. The FMDV "look-alike" diagnostic assay panel contains 5 PCR and 12 reverse transcriptase PCR (RT-PCR) signatures for a total of 17 simultaneous PCR amplifications for 7 diseases plus incorporating 4 internal assay controls. It was developed and optimized to amplify both DNA and RNA viruses simultaneously in a single tube and employs Luminextrade mark liquid array technology. Assay development including selection of appropriate controls, a comparison of signature performance in single and multiplex testing against target nucleic acids, as well of limits of detection for each of the individual signatures is presented. While this assay is a prototype and by no means a comprehensive

test for FMDV "look-alike" viruses, an assay of this type is envisioned to have benefit to a laboratory network in routine surveillance and possibly for post-outbreak proof of freedom from foot-and-mouth disease.

Text in English (article in press)



Topology of evolving, mutagenized viral populations: quasispecies expansion, compression, and operation of negative selection

Ojosnegros S, Agudo R, Sierra M, Briones C, Sierra S, Gonzalez-Lopez C, Domingo E, Cristina J
BMC Evol Biol. 2008 Jul; 8 (1): 207

ABSTRACT: BACKGROUND: The molecular events and evolutionary forces underlying lethal mutagenesis of virus (or virus extinction through an excess of mutations) are not well understood. Here we apply for the first time phylogenetic methods and Partition Analysis of Quasispecies (PAQ) to monitor genetic distances and intra-population structures of mutant spectra of foot-and-mouth disease virus (FMDV) quasispecies subjected to mutagenesis by base and nucleoside analogues. **RESULTS:** Phylogenetic and PAQ analyses have revealed a highly dynamic variation of intrapopulation diversity of FMDV quasispecies. The population diversity first suffers striking expansions in the presence of mutagens and then compressions either when the presence of the mutagenic analogue was discontinued or when a mutation that decreased sensitivity to a mutagen was selected. The pattern of mutations found in the populations was in agreement with the behavior of the corresponding nucleotide analogues with FMDV in vitro. Mutations accumulated at preferred genomic sites, and dn/ds ratios indicate the operation of negative (or purifying) selection in populations subjected to mutagenesis. No evidence of unusually elevated genetic distances has been obtained for FMDV populations approaching extinction. **CONCLUSIONS:** Phylogenetic and PAQ analysis provide adequate procedures to describe the evolution of viral sequences subjected to lethal mutagenesis. These methods define the changes of intrapopulation structure more precisely than mutation frequencies and Shannon entropies. PAQ is very sensitive to variations of intrapopulation genetic distances. Strong negative (or purifying) selection operates in FMDV populations subjected to enhanced mutagenesis. The quantifications provide evidence that extinction does not imply unusual increases of intrapopulation complexity, in support of the lethal defection model of virus extinction.

Text in English

<http://www.biomedcentral.com/content/pdf/1471-2148-8-207.pdf>

Inocuidad de los Alimentos / Food Safety



Respuestas solidarias para la crisis alimentaria

Dra. Mirta Roses Periago

Directora

Organización Panamericana de la Salud

RESPYN 2008; 9 (2), Editorial

La crisis alimentaria global causada por el fuerte incremento de los precios de los alimentos y su inaccesibilidad, amenaza nuestros avances sanitarios, y los relativos al ambiente y la lucha contra la pobreza, en el marco de los Objetivos de Desarrollo del Milenio.

Hago un llamado para que juntos, la comunidad internacional y los países de la Región transformen esta crisis en una oportunidad de avanzar más rápidamente por la salud y el desarrollo integral de nuestros pueblos.

Text in Spanish

http://www.respyn.uanl.mx/ix/2/editorial/editoria_mirta_roses.htm

Rabia / Rabies



Risk of rabies introduction by non-commercial movement of pets

Have P, Alban L, Berndtsson LT, Cliquet F, Hostinik P, Rodeia SC, Sanaa M

Dev Biol (Basel) 2008; 131: 177-85

A mixed binomial Bayesian regression model was used to quantify the relation between nucleotide differences in the VP1 gene of Foot-and-mouth disease virus (FMDV) serotype A, and epidemiologic characteristics of the outbreaks from which the viruses were obtained between January and December 2001 in Argentina. An increase in the probability of different nucleotides between isolates was associated with a longer time between isolation dates, a greater distance between isolation locations, an increase in the difference between attack rates, and an increase in the difference in outbreak durations. The farther apart the outbreak herds were in the southerly and easterly directions, the greater the

difference in nucleotide changes. The model accurately predicted genetic distances of isolates obtained in 2001 compared with a 2002 isolate ($P < 0.01$), which suggested that the predictive modeling approach applied in the present study may be useful in understanding the epidemiology of evolution of FMDV and in forensic analysis of disease epidemics.

Text in English

Salud Publica Veterinaria / Veterinary Public Health



A contribuição da OPAS para a saúde pública veterinária no Brasil e nas Américas **Schneider, MC**

Rev CFMV 2008; 14 (43): 80-81

A Organização Pan-Americana da Saúde (OPAS), vem trabalhando na perspectiva da relação entre a saúde animal e a humana desde a década de 40.

As principais linhas de cooperação técnica da OPAS em Saúde Pública Veterinária são: o controle e eliminação das zoonoses; a inocuidade dos alimentos; e a erradicação da febre aftosa. Além de atuar em relação aos aspectos mais vinculados à cooperação técnica, normas e recomendações de especialistas, a OPAS também incentiva a integração setorial entre saúde e agricultura.

Text in Portuguese

<http://bvs.panaftosa.org.br/textoc/Schneider-SPV-americas.pdf>



Visión del Futuro de la Educación Médica Veterinaria

OPS/OMS, AAVMC

2008

Versión traducida al español del "AAVMC Foresight Report: Envisioning the Future of Veterinary Medical Education", estudio hecho con el objetivo de formular una visión y orientación del futuro sobre las características de la educación médica veterinaria para que los veterinarios puedan hacer frente con éxito a los desafíos de las próximas décadas.

Text in Spanish

http://bvs.panaftosa.org.br/textoc/revista_EMV.pdf

Zoonosis / Zoonoses



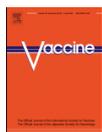
Disease and destiny-mystery and mastery

Beran GW

Prev Vet Med. 2008 Jul

Bats are very interesting animals: they are the unique flying mammals, have developed a highly sophisticated echolocation system, and have become specialized to eat different types of diets. Hematophagous (vampire) bats are those specialized to feed solely on blood and have served as a source of inspiration for researchers as well as for writers. Vampire bat attacks on humans have moved from the realm of science fiction to reality in Latin America and bats (including non-hematophagous ones) have assumed an important role in the transmission of rabies virus to humans. This article discusses the emerging role of bats as rabies virus transmitters, with particular emphasis on the role of hematophagous bats in the epidemiology of human rabies in Latin America. Possible reasons associated with the increasing risk of exposure to bats in this region are also discussed.

Text in English (article in press)



The cost of preventing rabies at any cost: Post-exposure prophylaxis for occult bat contact

Huot V, De Serres G, Duval B, Maranda-Aubut R, Ouakki M, Skowronski DM

Vaccine 2008 Jul

When early people made their appearance, zoonotic infectious diseases were already waiting, but epidemic diseases did not appear in human history until people began to live in large numbers under conditions of close contact, mainly during the last 10,000 years. Disease has decimated urban populations, conquered armies, and disrupted society. The focus here is on (1) the plague of Athens and the Black Death; (2) smallpox, influenza, and rabies; (3) avian influenza prion diseases, and foot & mouth disease; and (4) emerging and re-emerging diseases. All have veterinary public health associations. In Athens, Greece, in 430 BC, when the Spartans ravaged the countryside, hordes crowded

into Athens so that orderly movements, space in which to live, and adequate supplies of food became impossible. Crowding of any population fosters disease transmission; chaos and disorder enhance it all the more. Out of northern Egypt came a terrible plague from across the Mediterranean Sea. The identity of the plague of Athens remains unsure, but the well-considered conclusion is Rift Valley Fever, a mosquito borne, viral zoonosis. The Black Death, also called the Plague, raged in Asia for centuries. In 1347, the Black Death was brought by a ship out of Asia to Sicily. The scenes of devastation were repeated throughout Europe, with 90% or more of the people dying in city after city. Influenza, too, has been a cause of periodic human epidemics, but the great pandemic of influenza occurred in the last months of World War I. In the years of highest occurrence, more than half the world's population became clinically infected. If veterinary public health had been born earlier, it could have led to elucidating the epidemiology of influenza and the plagues of Athens, Europe, and Asia. In turn, smallpox had also caused continual tragedy. In 1796, Edward Jenner began to harvest pustules of cowpox from children or infected cows and inject them into susceptible children. In 1980, the World Health Organization declared that smallpox had been eliminated from the world. Rabies, though, still strikes terror. A number of animal diseases, broadly termed emerging and re-emerging diseases, need surveillance because they have the potential to impact human health. From late in 2003 to 2007, the highly pathogenic H5N1 influenza virus in poultry infected at least 121 people and caused 62 deaths in four countries. The prion diseases, too, all have very high numbers in concentrated contacts. To control these diseases, veterinary public health is essential, with diagnosis, epidemiological surveillance, clinical manifestations, and prevention as primary measures.

Text in English

Seminarios, Congresos, Eventos, Cursos / Seminars, Congress, Events, Courses

33rd Annual World Small Animal Association Congress (WSAVA)

20-24 **August**, 2008

Dublin, Ireland

<http://www.wsava2008.com/>

4th International Conference on Antimicrobial Agents in Veterinary Medicine

24-28 **August**, 2008

Prague, Czech Republic

<http://www.aavmconferences.com/aavm2008/>



Salud Pública Veterinaria
Centro Panamericano de Fiebre Aftosa



Veterinary Public Health
Pan American Foot and Mouth Disease Center

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