Snippets

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A total of 79 new confirmed cases of Ebola virus disease (EVD) were reported in the week ending 22 March 2015: The lowest weekly total in 2015. There were 45 new confirmed cases reported from Guinea and 33 from Sierra Leone. Having reported no cases for 3 consecutive weeks, a new confirmed case was reported from Liberia on 20 Mar 2015. (http://apps.who.int/ebola/current-situation/ebola-situation-report-25-march-2015).

Given that there are currently no approved antivirals to treat Ebola virus disease, there is an urgent need for development and evaluation of antivirals against Ebola. Recently, the World Health Organization identified a number of antivirals including AVI-6002 (AVI-7537 and AVI-7539), BCX4430, brincidofovir, favipiravir, and TKM-100802 for evaluation on priority. (Recent Pat Anti Infect Drug Discov 2015 Mar 26 [Epub ahead of print]).

A large body of research supports the idea that Toxoplasma harbors the potential to change human behavior. In a series of personality assessments, spanning more than a decade and involving nearly 2,500 individuals, a group found that certain traits often coincide with a Toxoplasma infection. For example, infected men tend to be introverted, suspicious, and rebellious; whereas, infected women tend to be extraverted, trusting, and obedient. (http://www.salon.com/2015/03/27/the_parasite_made_me_do_it_how_a_common_infection_could Manipulate_our_behavior_partner/).

A group developed a duplex solid-phase fluorescent assay (dFISA) for the simultaneous detection of anti-\(T.gondii\) immunoglobulin G (IgG) and IgM antibodies in prenatal care screening for toxoplasmosis. Same-well IgG/IgM dFISA with refined conjugates was used to test 140 samples from university students, 120 samples from pregnant women, and 24 samples from adult volunteers at a large public hospital. It was found that dFISA offers high concordance, specificity, and reproducibility for IgG (kappa = 0.883) and IgM (kappa = 0.918), which is useful in high-throughput applications for antenatal care. (J Immunol Methods 2015 Mar 19. pii: S0022-1759(15)00071-X. doi: 10.1016/j.jim.2015.03.007. [Epub ahead of print]).

ANTHRAX - KENYA: (KIAMBU) HUMAN, BOVINE

Two people died and two more admitted with swollen arms after skinning the carcass of a cow in Gatundu South, Kiambu county, former Central province, Kenya. They were among a group of people who, on the 20th of March 2015, helped a neighbor to skin a cow that had died from an unknown illness, now thought to be anthrax. (<http://www.the-star.co.ke/news/two-killed-gatundu-anthrax-cow-contact>).

Anthrax toxin, comprising protective antigen, lethal factor, and edema factor, is the major virulence factor of Bacillus anthracis, an agent that causes high mortality in humans and animals. Protective antigen forms oligomeric prepores that undergo conversion to membrane-spanning pores by endosomal acidification, and these pores translocate the enzymes lethal factor and edema factor into the cytosol of target cells. Although atomic structures of protective antigen prepores are available, how protective antigen senses low pH, converts to active pore, and translocates lethal factor, and edema factor, are not well-defined. Now, using cryo-electron microscopy with direct electron counting, researchers have determined the protective antigen pore structure at 2.9-Å resolution. Comparisons of four structures reveal conformational changes in prepore to pore conversion that support a multistep mechanism by which low pH is sensed and the membrane-spanning channel is formed. (Nature 2015 Mar 16. doi: 10.1038/nature14247 [Epub ahead of print]).

A range of pre-prepared Indian foods from the “Mrs Unis” brand have been recalled by the Food Standards Agency (FSA), UK, following concerns over the Edinburgh-based company’s procedures to control growth of Clostridium botulinum. The brand was ordered to withdraw a range of ‘atmosphere packed’ products, including six different types of pakora, as a “precautionary measure.”

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An outbreak of syphilis in eastern Newfoundland, Canada, was reported with 15 cases confirmed so far in 2015. In all of 2014, there were 26 confirmed cases. Of the 41 cases of syphilis reported since January 2014, 10 have been coinfected with human immunodeficiency virus (HIV). It was felt that since syphilis can cause ulcers, at least in the initial stages, it could contribute to the transmission of HIV by making the virus easier to pass along from one person to another. (http://www.cbc.ca/news录用newfoundland-labrador/syphilis-outbreak-reported-in-eastern-newfoundland-1.2998509).

A study examined a possible association between HIV infection and conventional sexually-transmitted diseases (STDs) in a population of 700 patients seen in some hospitals and clinics in Lagos State, Nigeria, between November 1997 and December 1999. A total of 150 (21.5%) were found positive for various STDs, while 550 (78.5%) were negative. Also, 109 (15.8%) were seropositive for HIV, while 591 (84.4%) were seronegative. The frequency of STDs diagnosed were, Treponema pallidum 38(25.3%), Neisseria gonorrhoea 3(2.0%), Chlamydia trachomatis 26(17.3%), hepatitis B virus 60(40.0%), Staphylococcus aureus 20 (13.3%), and Candida albicans 3(2.0%). Amongst the 150 (21.5%) patients positive with STDs, 82(54.65%) were found to be positive for HIV antibodies. (West Afr J Med. 2002 Apr-Jun;21(2):153-6).

Refrigerator workers in Barbosa, Brazil, who were ill for almost 2 months have been diagnosed with Q fever. The diagnosis was reported to Municipal Health of Barbosa on 15th March, 2015. Tests found that the staff, 16 in total, had been infected with (Coxiella burnetii. http://jornaldiadia.com.br/surto-de-doenca-rara-atinge-trabalhadores-de-barbosa/).

During 2007–2010, over 4,000 persons in The Netherlands contracted Q-fever, a zoonosis caused by the bacterium C. burnetii. Human infections may occur through direct contact with infected animals, or through inhalation of contaminated dust particles or aerosols. Discharge of waste water from Q fever-contaminated goat farms may result in the presence of C. burnetii in sewage water and aerosols at sewage water treatment plants (SWTPs). A study, therefore, attempted to determine the presence of C. burnetii at SWTPs. Sewage influent and aeration tank samples from four SWTPs receiving discharge from Q fever positive goat farms were examined by using a multiplex real-time PCR detecting C. burnetii deoxyribonucleic acid (DNA) by targeting IS1111 and com1 genes. Influent (44%; n = 16/36) and active sludge (36%; n = 13/36) samples were positive. The presence of C. burnetii DNA in sewage water samples suggests that SWTPs receiving waste water from Q fever-contaminated goat farms may contribute to the spread of C. burnetii to the environment. (Int J Hyg Environ Health. 2013 Nov;216(6):698-702. doi: 10.1016/j.ijeh.2012.12.010. Epub 2013 Jan 22).

The bacterium responsible for the contamination of nutrition solutions, leading to the deaths of three preterm infants in Chambery Hospital has been officially recognized, according to the Pasteur Institute, France. This new
organism now bears the name *Rouxiella chamberiensis*, as stated by the institute on 17th March, 2015. Rouxiella, the name of this new genus, was chosen in homage to Emile Roux, close collaborator of Louis Pasteur. The species name was given in reference to Chambery, the location of the emergence of the new bacterium. (http://www.bienpublic.com/actualite/2015/03/17/la-nouvelle-bacterie-en-cause-reconnue-par-la-science).

Parenteral nutrition bags for newborns were found contaminated by a previously undescribed Enterobacteriaceae. The six isolates studied by rrs- (encoding 16S rRNA) and multilocus sequence analysis (MLSA) formed a discrete branch close to genera Ewingella, Rahnella, Yersinia, Hafnia, and Serratia. Phenotypically, the new taxon was distinct from these four genera. The new taxon gave positive Voges-Proskauer, Simmons citrate, o-nitrophenyl-β-galactoside hydrolysis tests; fermented D-glucose, D-mannitol, L-rhamnose, D-melibiose, L-arabinose, D-xyllose, and hydrolyzed esculin; did not ferment maltose, trehalose, raffinose, D-sorbitol, sucrose, and D-cellobiose. The following tests, motility, gas production, urease, gelatinase, and nitrate reduction were also negative. All isolates failed to grow at 37°C. Therefore, the new taxon is proposed as a new species and genus and named *Rouxiella chamberiensis* gen. nov., sp. nov. The type strain is 130333T (= CIP 110714T = DSM 28324T). The G+C content of the type strain DNA was 53 mol%. (Int J Syst Evol Microbiol. 2015 Mar 6. pii: ijs.0.000179. doi: 10.1099/ijs.0.000179 [Epub ahead of print]).

A 6-month-old baby in Pennsylvania, who was bitten by a rat that was to be fed to the family’s pet snakes in late December 2014 and died on New Year’s Day 2015, was determined to have contracted rat bite fever, as stated by Cumberland County Coroner Charley Hall on 19th March 2015. (http://outbreaknewstoday.com/pennsylvania-infant-died-of-rat-bite-fever-coroner-80392/).

In August 2013, the County of San Diego Health and Human Services Agency, California, was notified of a fatal case of rat-bite fever (RBF) in a previously healthy male, aged 10 years, who owned pet rats. Two days before his death, the patient experienced rigors, fevers, vomiting, headaches, and leg pains. A complete blood count performed during resuscitation revealed anemia (hemoglobin 10.0 g/dL, normal = 13.5–18.0 g/dL), thrombocytopenia (platelets 40,000/µL, normal = 140,000–440,000/µL), and leukocytosis (white blood cells 17,900 cells/µL, normal = 4,000–10,500/µL) with 16% band neutrophils; the patient also had evidence of disseminated intravascular coagulation. No rash or skin breakdown was noted. Lung, liver, and epiglottis tissue collected postmortem was positive for *Streptobacillus moniliformis* DNA by polymerase chain reaction. (MMWR Morb Mortal Wkly Rep. 2014 Dec 19;63(50):1210-1).

On World Tuberculosis Day, 24th March 2015, the World Health Organization (WHO) has called for new commitments and new action in the global fight against tuberculosis (TB). Though there has been tremendous progress in recent years, in 2013, 9 million people fell ill with TB and 1.5 million died.

Clearly, we all need to do more.

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