



**ISTITUTO ZOOPROFILATTICO SPERIMENTALE
DELLA LOMBARDIA E DELL'EMILIA ROMAGNA**
"BRUNO UBERTINI"
(ENTE SANITARIO DI DIRITTO PUBBLICO)

Sede Legale: Via Bianchi, 9 – 25124 Brescia - ITALIA
Tel. +3903022901 – Fax +390302425251 – Email info@izsler.it
C.F. - P.IVA 00284840170
N. REA CCIAA di Brescia 88834

**CONCORSO PUBBLICO PER TITOLI ED ESAMI PER LA COPERTURA A TEMPO
DETERMINATO DI N. 1 UNITA' DI PERSONALE NEL PROFILO PROFESSIONALE DI
RICERCATORE SANITARIO, CAT. DS CON LAUREA IN BIOLOGIA/BIOTECNOLOGIE
E COMPETENZE IN BIOLOGIA MOLECOLARE**

PROVA ORALE

PROVA ORALE N° 1

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare relativamente all'argomento di ricerca proposto

Enterococci are lactic acid bacteria (LAB) that play a role in the aroma formation, maturation, and sensory development of fermented foods such as meat and dairy products. They also contribute to the improvement of the extended shelf life of fermented foods by producing bacteriocin. The aim of this study was to isolate bacteriocin-producing LAB from sheep and goat colostrum, to characterize the bacteriocin-producing strains, and determine the technological properties of the strains.

PROVA ORALE N° 2

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

The Rift Valley Fever virus (RVFV) is a mosquito-borne pathogen of humans and animals that respects no international or geographic boundaries. It is currently found in parts of Africa and the Arabian Peninsula where periodic outbreaks of severe and fatal disease occur, and threatens to spread into other geographic regions. In recent years, modern molecular techniques have led to many breakthroughs deepening our understanding of the mechanisms of RVFV virulence, phylogenetics, and the creation of several next-generation vaccine candidates. Despite tremendous progress in these areas, other challenges remain in RVF disease pathogenesis, the virus life-cycle, and outbreak response preparedness that deserve our attention.

PROVA ORALE N° 3

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

Bats are natural reservoirs for a variety of viruses, many of which are responsible for infectious diseases, and are putative sources of many other human and animal viruses. Circular Rep-encoding single-stranded DNA (CRESS DNA) viruses, have a similar genome structure to circoviruses and infect a wide range of eukaryotic hosts from unicellular organisms to plants and animals. Several bat-associated circoviruses and CRESS DNA viruses have been described, but the exact diversity and host species of these viruses are generally unknown.

PROVA ORALE N° 4

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

Reoviruses have been shown to infect a very broad range of mammalian sources, and infections in humans have been associated with gastrointestinal and respiratory illnesses. While the presence of reovirus in several different water matrices and clinical samples has been reported, the link between the presence of reoviruses and human disease is not well documented.

PROVA ORALE N° 5

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

Mammalian orthoreoviruses (MRVs) are emerging infectious agents which may affect wild animals. MRVs are usually associated with asymptomatic or mild respiratory and enteric infections, however, severe clinical manifestations have been occasionally reported in human and animal hosts. An insight on their circulation is essential to minimize the risk of diffusion to farmed animals and possibly to humans.

PROVA ORALE N° 6

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

In the past years (2020-2022) blue discolouration of mozzarella cheese increased in northern Italy, worrying the dairy operators still remembering the 2010 episode, in which over 70,000 mozzarellas coloured blue causing a strong economic impact because the product no longer had consumer confidence. This phenomenon is mainly caused by *Pseudomonas fluorescens* contamination, being *Pseudomonas* spp. bacteria one of the main psychrotrophic organisms

of concern in the dairy industry. This highlighted the need to prevent and monitor the presence and persistence of *P. fluorescens* strains in processing environments.

PROVA ORALE N° 7

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

Torque teno virus (TTV) is a non-enveloped circular ssDNA virus which frequently infects swine, and has been associated with hepatic, respiratory and autoimmune disorders. TTVs are ubiquitous viruses and have been often detected in mammalian species, including dogs, cats, swine, cattle, sheep, wild boars, hares, and non-human primates. TTVs are genetically distinct and are classified in a species-specific manner, although the genomes of TTVs detected from several animal species, including humans, show a similar organization. TTV pathogenic role is still uncertain, and clear data in literature on virus reservoirs are lacking. Since it cannot be excluded a human cross-species infection of TTVs of animal origin, it seems interesting to investigate the possible role of animal species as reservoirs.

PROVA ORALE N° 8

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

In 2019, SARS-CoV-2 was identified as the cause of an easily transmissible disease that was declared as world pandemic. Foodborne transmission was never reported, however, early studies suggested that food could be a possible vehicle for SARS-CoV-2 entry in the human gastrointestinal tract leading to possible infection, and transmission through contact with contaminated food is also possible. Literature about SARS-CoV-2 investigation in foods in Italy is lacking, despite further studies are desirable to inspect possible issues linked to food consumption, both caused by food ingestion or contact with contaminated food.

PROVA ORALE N° 9

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

Salmonella enterica and *Campylobacter* spp. are bacterial pathogens that cause the majority of foodborne infections in EU countries, being the second and first cause of food-borne diseases in 2017, respectively. In Europe, most salmonellosis outbreaks and infections are linked to the consumption of poultry meat, eggs, and their derived products. The main reservoir for foodborne transmission of *Campylobacter coli* and *jejuni* are poultry species, and handling and eating raw or undercooked chicken meat is the main risk factor for human infection, accounting for up to 24.2% of all the *Campylobacter* spp. infections in EU. The testing and rapid detection of pathogenic microorganisms in foodstuffs, like *Salmonella* and *Campylobacter*, is crucial to identify contaminated foods and contain the spread of the pathogen before it leads to a serious outbreak.

PROVA ORALE N° 10

Il candidato sviluppi un'ipotesi di lavoro e definisca le tecniche da utilizzare, relativamente all'argomento di ricerca proposto

Hepatitis E virus (HEV) is the causative agent of hepatitis E, an emerging public-health infection which has an increasing incidence across Europe. Because of the apparent lack of species barriers, HEV was characterized as a zoonotic agent. Swine are recognized as the main reservoir, but HEV is also found in wild animals such as ungulates, lagomorphs, and bats. The ongoing extension of wild ungulates settle area combined with the high livestock concentration in the Po Valley, cause the increase of the contact likelihood between feral and domestic pigs, and intensification in both culling rates and availability of their meats. Data are required, especially to better clarify the HEV spread, circulation, and potential transmission through wild fauna and domestic pigs, and study the viral genetic diversity in wildlife.

DOMANDE INFORMATICA

- Cosa s'intende per Database?
- Banche dati bibliografiche, cosa sono?
- Come è possibile vedere le formule inserite nelle celle di un foglio Excel?
- È possibile proteggere da modifiche un documento di Word?
- Conosce programmi che permettano l'elaborazione statistica di dati?
- Quali opzioni ci sono per il comando "incolla" di Excel?
- Come si inserisce una formula nel programma Excel?
- Che differenza c'è tra "ricerca" e "ricerca avanzata"?
- Come si crea un grafico in Excel?
- Come si crea un indice in un programma di scrittura?