

## INIA, CENTRO DE INVESTIGACIÓN EN SANIDAD ANIMAL (INIA-CISA)

(ES)

<b>Research topics:</b>	<p>CISA is the Animal Health Research Centre as part of the National Institute for Agriculture and Food Research and Technology. It is a high-containment research infrastructure with the capacity to diagnose and research highly contagious animal diseases.</p> <p>Main lines of activity:</p> <ul style="list-style-type: none"><li>-Research on emerging, re-emerging and transboundary infectious animal diseases, particularly those causing severe economic losses for livestock producers and posing a high risk for Spain. Among them: Foot-and-Mouth Disease, Bluetongue, Peste des Petits Ruminants, Rift Valley Fever, West Nile virus infections, Transmissible Spongiform Encephalopathy and Rabbit Hemorrhagic Disease.</li><li>-Research on the regulatory mechanisms of the immune response in sheep, pig and fish, especially those triggered in response to viral infections.</li><li>- Design and development of new strategies for better control of pathogens: vaccines (VLPs, recombinant adenoviruses, peptides), adjuvants and diagnostic tools.</li></ul> <p>Relevant publications:</p> <ul style="list-style-type: none"><li>-Abós B, Wang T, Castro R, Granja AG, Leal E, Havixbeck J, Luque A, Barreda DR, Secombes CJ, Tafalla C (2016). Distinct differentiation programs triggered by IL-6 and LPS in teleost IgM(+) B cells in the absence of germinal centers. <i>Scientific Reports</i> 6, 30004.</li><li>-Leal E, Granja AG, Zarza C, Tafalla C (2016). Distribution of T Cells in Rainbow Trout (<i>Oncorhynchus mykiss</i>) Skin and Responsiveness to Viral Infection. <i>PLoS One</i> 11(1), e0147477.</li><li>- Meizi E, Caporale M, Rocchi M, Martín V, Gamino V, di Provvido A, Marruchella G, Entrican G, Sevilla N, Palmarini M (2016). Follicular dendritic cell disruption as a novel mechanism of virus-induced immunosuppression. <i>Proc Natl</i></li></ul>
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- Martín V, Pascual E, Avia M, Rangel G, de Molina A, Alejo A, Sevilla N (2016). A recombinant adenovirus expressing ovine interferon Tau prevents influenza virus-induced lethality in mice. *J Virol.* 90, 3783-8.
- Blanco E, Guerra B, de la Torre BG, Defaus S, Dekker A, Andreu D, Sobrino F. (2016) Full protection of swine against foot-and-mouth disease by a bivalent B-cell epitope dendrimer peptide. *Antiviral Res.* 129, 74-80.
- Moreno N, Mena I, Angulo I, Gómez Y, Crisci E, Montoya M, Castón JR, Blanco E, Bárcena J (2016) Rabbit hemorrhagic disease virus capsid, a versatile platform for foreign B-cell epitope display inducing protective humoral immune responses. *Sci Rep.* 6, 31844.
- Martin-Lopez A, Ortego J (2016) *Generation of Recombinant Modified Vaccinia Virus Ankara Encoding VP2, NS1, and VP7 Proteins of Bluetongue Virus.* *Methods Mol Biol.* 1349, 137-50.
- Borrego B, Lorenzo G, Mota-Morales JD, Almanza-Reyes H, Mateos F, López-Gi E, de la Losa N, Burmistrov VA, Pestryakov AN, Brun A, Bogdanchikova N (2016). Potential application of silver nanoparticles to control the infectivity of rift valley fever virus in vitro and in vivo. *Nanomedicine NBM* 12 (5), 1185-1192.
- Aguilar-Calvo P, Espinosa JC, Andreoletti O, González L, Orge L, Juste R, Torres JM (2016). Goat K222-PrPC polymorphic variant does not provide resistance to atypical scrapie in transgenic mice. *Vet Res* 47, 96.
- Espinosa JC, Nonno R, Di Bari M, Aguilar-Calvo P, Pirisinu L, Fernández-Borges N, Vanni I, Vaccari G, Marín-Moreno A, Frassanito P, Lorenzo P, Agrimi U, Torres JM (2016). PrPC Governs Susceptibility to Prion Strains in Bank Vole, While Other Host Factors Modulate Strain Features. *J Virol* 90, 10660-10669.
- Abad-Cobo A, Llorente F, Barbero MD, Cruz-López F, Forés P, Jiménez-Clavero MÁ (2016). Serosurvey Reveals Exposure to West Nile Virus in Asymptomatic Horse Populations in Central

	<p>Spain Prior to Recent Disease Foci. Transbound Emerg Dis. 8. DOI: 10.1111/tbed.12510</p> <p>- Sastre P, Gallardo C, Monedero A, Ruiz T, Arias M, Sanz A, Rueda P (2016). Development of a novel lateral flow assay for detection of African swine fever in blood. BMC Vet Res. 12, 206. DOI: 10.1186/s12917-016-0831-4.</p>
<p><b>Activities and services currently offered by the infrastructure/installation:</b></p>	<p>The Biocontainment Facility includes 40 BSL2/3 laboratories for:</p> <ul style="list-style-type: none"> <li>-Research on infectious diseases: molecular characterization, cloning, expression and production of recombinant proteins, to be used in diagnosis and vaccines, development of PCR protocols.</li> <li>-Specially designed laboratories for research on TSE.</li> <li>-Laboratories for handling radioactive isotopes.</li> <li>-Flow cytometry laboratory (FACS-Scalibur), Sorter.</li> <li>-Confocal microscopy</li> <li>-Necropsy room and animal facility consisting of 21 individual rooms designed to house various animal species.</li> <li>-Histopathology and immunohistochemistry services.</li> </ul> <p>In addition, the Biocontainment Facility harbours two laboratories enabling work with high risk infectious agents (NSL-4, OIE) and NCB3+ and authorised to handle FMDV.</p> <ul style="list-style-type: none"> <li>-Animal models: sheep, pigs, mice, rainbow trout</li> </ul>
<p><b>Description of the access to be provided under VetBioNet TNA call:</b></p>	<p>Location of work: INIA-CISA, Valdeolmos. Madrid, Spain. BSL3/3+ animal and/or laboratory facilities.</p> <p>On average each user or user group is expected to stay 30 days at the infrastructure.</p> <p>The users will be temporarily integrated into one of the research groups working at INIA-CISA, depending on the services and expertise requested. This way, the complete and specialized support will be ensured, as well as a swift process of all administrative issues.</p> <p>The unit of access is defined as one month. One typical access consists of 1 to 3 units of access.</p>

<b>Animal species/pathogens that can be worked on in this infrastructure/installation:</b>	Pig, sheep, mice, fish, some wild avian species
<b>Travel and subsistence costs:</b>	Travel costs will be covered and tickets will be purchased by INIA administration.
<b>Infrastructure/installation ethical rules:</b>	Animal experimentation requires previous approval by the INIA Ethics Committee.