OVERVIEW OF RELEVANT ISIDORe WORK PACKAGES AND THE REQUIRED AND/OR PROVIDED BIOSPECIMENS FOR OFFERED SERVICES

In terms of biospecimen handling and distribution besides sample integrity, regulatory compliance, and effective logistics, many different infectious disease research services with different requirements must be coordinated and managed within ISIDORe. To improve and facilitate biospecimen handling an overview of all the services offered and the biospecimens required and/or provided for them was compiled (see Table 3).

Table 3: Overview list of relevant ISIDORe WPs and the provided and/or required biospecimens for offered services

Work package	Leads / Services	Biospecimens provided/required for offered services
WP7	Provision of reference material - **European Virus Archive (EVA)** **Link EVA:** https://www.european-virus-archive.com/isidore-services Services: - Virus isolation and genetic characterization - *In vitro* and *in vivo* virus characterization - Production of (recombinant) virus batches	**Provided:** - Virus lineages and derived products - Virus variants (SARS-CoV-2) and associated materials - Reference material for broad-spectrum or specific detection/diagnostics of SARS-CoV-2 variants (antigens, antibodies and nucleic acid collections) - recombinant SARS-CoV-2 viruses, pseudotypes using VSV platform and recombinant proteins - Low passage batches of respiratory viruses, arboviruses, or RG4 viruses

	- Development and validation of a molecular pr serologic assay for the specific detection of a virus Bacterial: - genome-wide analysis and characterization of bacterial pathogens - identification of clusters of concern and emerging clones	- Recombinant viruses or surrogates (pseudoviruses) for respiratory viruses, arboviruses, or RG4 viruses - Recombinant proteins for respiratory viruses, arboviruses, or RG4 viruses - Standards and assays for standards for serology and molecular detection - Mammalian cell lines, rodent models for oncology **(University of Debreceen)**
WP8	Provision of biospecimens and associated data **(BBMRI)** **Link BBMRI:** https://www.bbmri-eric.eu/ **Find Samples:** https://directory.bbmri-eric.eu/#/ Services: - Provision of biospecimens and associated data - Provision of retrospective and on demand collections	**Provided by BBMRI biobanks:** - Buffy coat - Cell lines - DNA - cDNA/mRNA - Feces - Nasal swab - Pathogens - Peripheral blood cells - Plasma - RNA - MicroRNA - Saliva - Serum

		- Throat swab
		- Tissue (frozen)
		- Tissue (paraffin preserved)
		- Tissue (stained sections/slides)
		- Urine
		- Whole Blood
		Associated Data:
		- Diagnostic images
		- Clinical data
		- Pre-analytical data
WP9	Provision of access to analytical services **(Euro-BioImaging, Instruct)** **Link Euro-BioImaging:** https://www.eurobioimaging.eu/content **Link Instruct:** https://isidore.instruct-eric.org/isidore-services Services: - State-of-the-art services for structural biology - Provision of imaging services - Provision of services for metagenomics and transcriptomics data	**Required:** - Cell cultures (living mammalian, animal cells) - Infected cells - Tissue (human, animal) - DNA/RNA - Single biomolecules, nanoobjects (nanoparticle) - Viral proteins /small ligands - cryoEM images of proteins - Blood (serum, plasma) / Urine - Rodents, livestock and wildlife species

		- Insect samples
		Human imaging:
		- Patients for MRI, PET
WP10	Provision of services for diagnostic & therapeutic development **(EU-OS)** **Link EU-OS:** https://www.eu-openscreen.eu/projects/isidore.html Services: - drug discovery and early preclinical development services - access to biological safety level (BSL) high throughput screening (HTS) (BSL2/BSL3) - medicinal chemistry (for drug development) - access to small molecule therapeutics platform - access to compound libraries - access to hit to lead /candidate development platforms - access to antibody discovery platform - antibody characterization - microfluidics	**Required:** - Primary, laboratory and genetically modified cell lines - Clinical, laboratory and genetically modified infectious virues - Access to pathogenic organisms for compound testing - Human cell lines - Human primary cells - Viruses, clinical isolates, variants - Vectors - DNA/RNA - Plasma - Animal tissue (animal models provided by WP14)
WP11	Provision of access to ex vivo models **(VetBioNet, ERINHA)**	**Required:** - Material needed for 2D/3D cellular models (immortalized cell lines, primary cells, mesenchymal stem cells, well

Link ERINHA: https://www.erinha.eu/

Link VetBioNet: https://www.vetbionet.eu/

Services:

- Access to state-of-the-art *ex vivo* models

- On demand development of new cellular or tissue systems

- *Ex vivo* models for SARS-CoV-2, other respiratory viruses, RG4 pathogens, vector-borne pathogens

differentiated and/or polarized cell systems, engineered cell lines and primary cells, organoids, precision-cut tissue cultures, organotypic cultures, 3D vessel-on-chip)

- Primary cells and organs from naturally infected patients (WP8) and animals (WP14)

- In ovo infection models (chicken eggs)

- Zebrafish embryo and early larvae

- Virus strains

- Cell models

- Human and animal samples

WP12

Provision of access to immune monitoring & profiling services **(EATRIS)**

Link EATRIS: https://eatris.eu/

Services:

- State-of-the-art immune assays

- Access to immune-monitoring and profiling services

- Imaging services (WP9)

- Multi-site immune-analysis of infectious samples

Required:

- Immune cells in human tissue

- Infected biological materials

- Immune proteins

- DNA/RNA

- Viral isolates

- Organoids/Spheroids

- Mouse, swine, cattle and poultry (DNA/RNA, immune cells)

- Animal tissue (Livestock)

- Cell models

- Human tissue

		- PBMCs
		- Serum
		- Mouse models
		- Mouse, rat and human infectious samples
WP13	Provision of access to vaccine-specific services **(TRANSVAC, EATRIS/JRC)** **Link TRANSVAC:** https://www.transvac.org/ **Link TRANSVAC2:** https://www.transvac.org/transvac2 Services: - Access to adjuvants and formulation services (GLP, GMP)	**Required:** - Laboratory animals - Blood and other bodily fluids - Tissues and biopsies - Primary cells - Postmortem samples
WP14	Provision of access to live animal and arthropod vector models **(VetBioNet, Infravec)** **Link Infravec:** https://infravec2.eu/ **Link VetBioNet:** https://www.vetbionet.eu/ Services: - Access to live animal models - Pathogen infection models - Access to vaccine and innocuity models - Access to miscellaneous services - Access to arthropod vector models	**Provided:** Animal models: - Rodents (Mice, rats, hamsters), rabbits, ferrets, non-human primates, livestock (pig, ruminants, poultry), wildlife animals ((wild carnivores, New World camelids, cervidae, wild rodents, fruit bats, water fowl, game birds) - RG 4 Pathogen infected models (rodents, NHP, livestock and wild species) - RG 2-3 pathogen infected models (rodents, rabbits, ferrets, NHP, livestock and wildlife species) - KO/KI mouse models

		- Transgenic pigs and chicken
		- Sandflies (infected with Leishmania)
		- Hard and soft Ticks
		- Mosquito vectors
		- Tsetse flies
		- Zebrafish larvae
		- arthropods
		- DNA
WP15	Provision of access to support services for clinical trials: regulatory oversight, planning, design & conduct **(ECRIN)** **Link ECRIN:** https://ecrin.org/ Services: - Regulatory advice and development strategy - Protocol design and trial planning - Transnational access to platform trials for new therapeutics, prevention or vaccine intervention arms	- No material needed
WP16	Epidemiology & social sciences services **(Sonar-Global, Infravec)** **Link Infravec:** https://infravec2.eu/ **Link Sonar-Global:** https://www.sonar-global.eu/	- No material needed

Services:

- Access to field site facilities

- Access to field services for pilot field trials

- Access to integrated data services

- Access to social sciences services

- Access to scale up services for qualitative analyses and epidemic response

- Access to community surveillance and social dimension of outbreak investigation

- Access to surveillance services for SARS-CoV-2 variants