

Publicações Periódicas

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Produção Científica do DCV Indexadas na Web of Science

[Protocol for monitoring the growth of *Solanum betaceum* non-embryogenic callus using electrochemical impedance spectroscopy](#)
Caeiro, A; Canhoto, J and [Rocha, PRF](#)

2025

[STAR PROTOCOLS](#) 6 (4)

Callus cultures have important biotechnological applications. Here, we describe the use of electrochemical impedance spectroscopy (EIS) as a real-time and nondestructive approach to monitor callus growth. We describe the steps to obtain *in vitro* tamarillo clones from seeds and from these non-embryogenic calluses. We detail the steps for the preparation of the EIS apparatus and (...)

[Decreasing mercury concentrations in beaks of the giant warty squid *Moroteuthopsis longimana* in the Scotia Sea \(Southern Ocean\) since the 1970s](#)

[Lopes-Santos, S; Xavier, JC; \(...\); Queirós, JP](#)

2025

[MARINE POLLUTION BULLETIN](#) 221

The giant warty squid *Moroteuthopsis longimana* is an important prey of top predators in the Southern Ocean. It is therefore a major link in the pathway of contaminants like mercury (Hg) to higher levels in food webs. In this study, we evaluated changes in Hg concentrations in beaks of adult *M. longimana* collected from the boluses (pellets) of wandering albatross *Diomedea exulans* (...)

[Development and characterization of novel intranasal in situ thermoreversible ketoprofen-loaded nanoemulgels for the treatment of glioblastoma](#)

Pires, PC; Magalhaes, M; (...); Paiva-Santos, AC

2025

[JOURNAL OF DRUG DELIVERY SCIENCE AND TECHNOLOGY](#) 114

Ketoprofen (KET) has been proven effective against glioblastoma. Nevertheless, its hydrophobic nature and susceptibility to degradation upon administration, added to the blood-brain barrier's low permeability, make its repurposing for brain cancer treatment challenging. Having this in mind, the purpose of this work was to develop KET-loaded in situ thermoreversible (...)

[Biocontrol in action: Assessing the impact of a biocontrol agent on invasive plant seed dynamics](#)

Duarte, LN; Marchante, H; (...); Marchante, E

2025

[JOURNAL OF ENVIRONMENTAL MANAGEMENT](#) 394

The management of extensive areas invaded by alien plants using only physical and chemical control methods is challenging as it frequently only provides short-term suppression. Additionally, success depends on thorough follow-up, which can be prohibitively expensive and, as such, neglected. More successful and sustainable management of widespread invasive alien plants may be (...)

[Structural Characterization and AI-Enhanced Modeling of a Broadly Neutralizing Camelid Antibody Against SARS-CoV-2 Variants](#)

Hanack, K; Orzel, U; (...); Renugopalakrishnan, V

2025 (Early Access)

[ADVANCED THERAPEUTICS](#)

The Omicron variants of SARS-CoV-2 are characterized by their high transmissibility and immune evasion. Existing treatments using neutralizing antibodies have shown different effectiveness due to variants with mutations occurring mainly in the RBD and NTD regions. In this study, the functional neutralizing ability of a camelid full-length antibody (hcAb-B10) and its corresponding VHH (...)

[Seed dispersal as a backup system to resprouting and seeding during post-fire regeneration](#)

Costa, JM; Heleno, RH; (...); Timóteo, S

2025 (Early Access)

[ANNALS OF BOTANY](#)

Background and Aims Plant populations can recover from wildfires through resprouting (resprouters), recruiting from in situ surviving seed banks (seeders) or recolonization via seed dispersal. However, it is unclear how complementary these mechanisms can be, especially whether and how specific seed dispersal syndromes are associated with resprouter or seeder potential. In (...)

[Mitochondria under fire: toxicological mechanisms of brominated flame retardants](#)

Miranda, RG; Machado, IF; (...); Palmeira, CM

2025 (Early Access)

[TOXICOLOGY MECHANISMS AND METHODS](#)

Brominated flame retardants (BFRs) are ubiquitous and persistent environmental contaminants owing to their extensive use in consumer products. Although linked to various adverse health effects, the underlying molecular mechanisms remain complex. This review consolidates scientific evidence positioning mitochondria as a central target of BFR toxicity, unraveling the pathways that (...)

[Patterns of pharmaceutical contamination in streams of European cities across urbanisation gradients: Potential impacts on One Health](#)

Rodrigues, F; Calapez, AR; (...); Feio, MJ

2025

[JOURNAL OF HAZARDOUS MATERIALS](#) 499

Pharmaceuticals are Contaminants of Emerging Concern, with known effects on aquatic organisms such as increased mortality and reproduction inhibition. This study aimed to provide a comprehensive overview on occurrence of pharmaceuticals in European urban streams, and to assess the patterns and factors influencing their presence in the water. Sixteen pharmaceuticals from (...)

[A Canoe for the Swamp and the Sea: Documentation of the Construction of a Wooden Plank Watercraft in Loma de Arena, Bolívar, Colombia](#)

Arango, AJ; Borrero, LR; (...); Pacheco, EC

2025 (Early Access)

[INTERNATIONAL JOURNAL OF NAUTICAL ARCHAEOLOGY](#)

This article describes the tools, materials, and the conception, design and construction process of a traditional canoe by master Eugenio Cueto Pacheco in Loma de Arena, Bolívar, Colombia. It includes a photogrammetric model and a construction plan. The study also addresses theoretical and methodological discussions on the use of moulds in traditional boat and ship building, the (...)

[Optimizing Pluronic-PEI Nanocarriers for RNAi Delivery in Oral Cancer: From Polymer Synthesis to Functional Screening](#)

Domingues, C; Jarak, I; (...); Figueiras, A

2025 (Early Access)

BIOMACROMOLECULES

Oral squamous cell carcinoma (OSCC) treatment is hindered by the poor delivery of RNA interference (RNAi) therapeutics such as microRNAs (miRNAs). Here, we systematically explored the synthesis and functional optimization of Pluronic-polyethylenimine (PEI) nanocarriers for efficient miRNA delivery in OSCC. Among several Pluronic variants tested, only Pluronic L121 formed stable, fully (...)

Risks for human health from the loss of urban stream ecosystem services

Sousa, MC; Zerega, A; (...); Feio, MJ

2025 (Early Access)

CITIES & HEALTH

Freshwater ecosystems have the potential to provide services that benefit human society; however, their degradation in urban areas can lead to significant adverse effects on human health. We proposed and tested, with a case study (Coimbra/Portugal), an innovative approach to calculate those risks based on the loss of specific ecosystem services provided by urban streams that (...)

Cheese: mere indulgence or part of a healthy diet?

Eugénio, A; Ramos, R; (...); Brandao, I

2025

FRONTIERS IN NUTRITION 12

Cheese is a widely consumed fermented dairy product with a long history of human consumption dating back several millennia, which justifies a brief historical introduction in this review. Beyond its cultural and gastronomic relevance, cheese presents a complex nutritional and microbial matrix that may confer neutral or even beneficial effects on cardiometabolic health, despite (...)

Palladium(<sc>ii</sc>) anticancer agents: the intricate case of the Pd-spermine complex

Santos, JAV; Felix, MM; (...); de Carvalho, LAEB

2025 (Early Access)

DALTON TRANSACTIONS

Palladium-based anticancer drugs are promising alternatives to platinum agents, with potential to overcome acquired resistance and reduce side effects. Among them, the dinuclear Pd(ii)-spermine complex (Pd2Spm) has shown notable cytostatic activity in vitro. However, its synthesis mechanism and structural properties remain poorly understood, which hinders further (...)

Estimating the Effective Population Size Across Space and Time in the Critically Endangered Western Chimpanzee in Guinea-Bissau: Challenges and Implications for Conservation Management

da Silva, MJE; Borges, E; (...); Bruford, MW

2025

EVOLUTIONARY APPLICATIONS 18 (10)

The western chimpanzee (*Pan troglodytes verus*) is a Critically Endangered taxon. In Guinea-Bissau (GB), the subspecies is increasingly threatened, but there is a lack of understanding regarding the degree of genetic threat faced by populations. This hinders the development of targeted conservation strategies and the prioritization of efforts by national agencies. In this study, (...)

A global synthesis of naturalised and invasive plants in aquatic habitats

Kortz, A; Hejda, M; (...); Pysek, P

2025

NEOBIOTA 102 , pp.473-494

Global databases have contributed to our understanding of alien, naturalised and invasive plant species distributions. Still, the role of species invasions in habitats, specifically in aquatic habitats, remains under-explored at the global scale. Accordingly, a comprehensive global synthesis of the status of plant invasions in aquatic habitats has been missing. Here, we focus on (...)

Soil biodiversity drives ecosystem multifunctionality across natural and degraded Atlantic Forest landscapes

Nascimento, GD; de Souza, TAF and Portela, JC

2025

PEDOBIOLOGIA 112

Soil biodiversity is a fundamental driver of ecosystem multifunctionality, yet its role in tropical seasonal dry forests remains underexplored. In this study, we evaluated how soil biodiversity influences primary production, ecosystem stability, nutrient cycling, and soil fertility across three land uses (natural ecosystem, pasture, and deforested area) and two seasons (rainy and dry), using (...)

The potential ecological collapse of the seed dispersal network in an insular high mountain: Teide National Park

Nogales, M; Mendes, SB; (...); Vargas, P

2025

GLOBAL ECOLOGY AND CONSERVATION 62

Human-induced habitat degradation has caused declines in plant and animal populations, resulting in the extinction of many frugivores and the loss of mutualistic interactions such as seed dispersal. In Teide National Park (Tenerife, Canary Islands), nearly 2000 years of human activity have likely disrupted the seed dispersal service, leaving behind a depauperated ecosystem in (...)

[First detection of JC polyomavirus in vaginal secretions from nonpregnant women: Exploring sexual transmission as a potential route of infection](#)

[Oliveira, JM](#); [Veiga, D](#); (...); [Matos, AM](#)

2025

[INTERNATIONAL JOURNAL OF INFECTIOUS DISEASES](#) 159

Objectives: JC polyomavirus (JCPyV) is a ubiquitous human virus responsible for asymptomatic lifelong persistent infection. Profound immunosuppression, or prolonged treatment with specific immunomodulatory molecules, may result in the development of Progressive Multifocal Leukoencephalopathy (PML). The main mode of JCPyV transmission remains uncertain. This study (...)

[Exploring the Potential of Seaweed-Based Nutraceuticals: Impact on Metabolic Diseases and Sustainable Food Sources](#)

[Tavares, J](#); [Cotas, J](#); (...); [Pereira, L](#)

Oct 2025

[NATURAL PRODUCT COMMUNICATIONS](#) 20 (10)

Objective The study evaluated the impact of gluten-free seaweed bread consumption on carbohydrate and lipid metabolism, demonstrating the potential benefits of including this type of nutraceutical in diets for the treatment of diseases such as diabetes and high cholesterol. Methods Ten volunteers of both sexes consumed seaweed bread for 6 weeks. Venous blood was collected (...)

[Expecting the unexpected: Random tissue barcoding reveals the presence of Pieridae in the diet of ground-dwelling Tenebrionidae \(Insecta: Lepidoptera, Coleoptera\)](#)

[Jurado-Angulo, P](#); [Vasconcelos, R](#) and [Garcia-Paris, M](#)

2025

[SHILAP-REVISTA DE LEPIDOPTEROLOGIA](#) 53 (211)

The genus of Tenebrionidae (Coleoptera) Oxycara Solier, 1835 includes 16 species endemic to the Cabo Verde Archipelago. In this study we analysed part of the diet of O. richardi Alluaud, 1936, endemic to the island of Sal, through the non-targeted amplification of a fragment of the mitochondrial gene cytochrome c oxidase subunit I (COI) from a specimen of this species. The results (...)

[Physical Impairment and Care Estimation in Medieval Estremoz \(Portugal\): A Bioarchaeological Perspective](#)

[Curto, A](#); [Lopes, C](#); (...); [Fernandes, T](#)

2025 (Early Access)

[INTERNATIONAL JOURNAL OF OSTEOARCHAEOLOGY](#)

This study aims to compare diet and skeletal health indicators between individuals with varying degrees of physical impairment and the general adult population from medieval Estremoz, Portugal, to assess their health status and their survival outcomes. Skeletal remains from 41 male adult individuals, including 8 with physical impairments and 33 from the general population, were (...)

[Effect of revegetation method \(seedling outplanting versus direct seeding\) on holm oak root architecture: Implications for restoration success under a global change scenario](#)

[Juan-Ovejero, R](#); [Castro, J](#); (...); [Leverkus, AB](#)

2025

[FOREST ECOLOGY AND MANAGEMENT](#) 598

Oaks develop robust taproots that enable them to access water from deeper soil layers and thrive in drought-prone environments. Understanding how different revegetation methods influence oak root development is therefore crucial for improving restoration strategies. In a common garden experiment, we compared the root systems of holm oaks (*Quercus ilex* L.) established through two (...)

[Epigenetic age in blood and bones from deceased individuals: assessment of DNA methylation at the FHL2 gene by droplet digital PCR](#)

[Dias, HC](#) and [Manco, L](#)

2025 (Early Access)

[AUSTRALIAN JOURNAL OF FORENSIC SCIENCES](#)

Blood and bones are essential DNA resources in forensic contexts. We examined DNA methylation (DNAm) levels at the FHL2 CpG site cg06639320 for age estimation purposes using droplet digital PCR (ddPCR) on DNA extracts from bones and blood samples of deceased Portuguese individuals. Blood samples from 56 individuals (11 women and 45 men, aged 24 to 91 years) and bone (...)

[Advancing trait-based biomonitoring approach for freshwater ecosystems assessment in Africa: current status, challenges, and future directions](#)

[Edegbene, AO](#); [El Yaagoubi, S](#); (...); [El Alami, M](#)

2025

FRONTIERS IN ENVIRONMENTAL SCIENCE 13

Freshwater ecosystems across Africa are increasingly threatened by anthropogenic pressures, including land-use changes, pollution, hydrological alterations, and climate variability. While traditional taxonomic approaches for biomonitoring these ecosystems remain valuable, they often fall short in detecting ecological processes and stressor-specific responses. In contrast, trait-based (...)

Why do tropical plants often have smaller genomes? Genome size evolution in Cactaceae is shaped by geographically structured polyploidy

Rodriguez, PE; Sader, MA; (...); Souza, G

2025 (Early Access)

BOTANICAL JOURNAL OF THE LINNEAN SOCIETY

Genomic traits (e.g. chromosome number, polyploidy, genome size-GS) often show correlations with the geographical distribution of species. However, the underlying drivers which underpin the relationships between genomic and ecological variables, and consequently biogeographical patterns, remain elusive. We investigated the biogeographical impacts of genomic traits in the (...)

Ametryn and Clomazone Disrupt Mitochondrial Bioenergetics in Rat Liver: Evidence for Inhibition of Complexes I and II and ATP Synthase

Silva, HPD; Ortiz, C; (...); Mingatto, FE

2025

TOXICS 13 (9)

Ametryn (AMT) and clomazone (CLZ) are commonly used herbicides frequently detected in food and water, raising concerns about potential health risks. This study investigated whether AMT and CLZ impair mitochondrial bioenergetics, a key mechanism linked to hepatotoxicity. Mitochondria were isolated from rat liver and incubated with AMT or CLZ (50-200 μ M) to assess respiration, (...)

Beneficial effect of AntiOxBEN₂, a mitochondria-directed antioxidant, on maturation of bovine oocytes: Analysis of bioenergetics pathways and embryo production

Ferreira, F; Teixeira, C; (...); Pereira, RMLN

2026

THERIOGENOLOGY 249

Oxidative stress during in vitro maturation of oocytes impairs mitochondrial function and reduces developmental competence. We evaluated the potential of AntiOxBEN(2), a novel triphenylphosphonium-conjugated antioxidant, to enhance bovine oocyte maturation and early embryo development. Cumulus-oocyte complexes were matured for 22h in medium supplemented with

Exploring Diet in the Middle Ages in Northeastern Portugal (Bragança) Through Dental Calculus: The Cases of Torre Velha (Castro De Avelãs) and Mós (Torre De Moncorvo)

Coutinho, AP; Tereso, S; (...); Silva, AM

2025

HERITAGE 8 (9)

Calculus deposits of individuals unearthed from Torre Velha (TVCA) and M & oacute;s (MOTM), Necropolis, were analyzed to obtain insights about diet, crop cultivation, and plant use. All samples ($n = 11$) revealed micro-remains, including starch grains, pollen grains, fungal spores, and sclerenchyma fibers. Starch grains were detected in all studied specimens, belonging mostly to wheat (...)

A new predictive model (MINASPACS) for spatially extensive biological assessments of southeastern Brazilian streams

Cordeiro, PF; Feio, MJ; (...); Macedo, DR

2025

WATER BIOLOGY AND SECURITY 4 (4)

Freshwater ecosystems are threatened by flow regulation, sedimentation, habitat degradation, non-native species, and water pollution. These disturbances have led to global losses of biodiversity and habitats. Therefore, it is essential to evaluate the ecological condition of freshwater ecosystems to promote effective management practices. Quantitative predictive models (...)

Effects of site elevation and grazing exclusion on phenolic compound production in *Nardus stricta* plants in high-elevation grasslands

Durán, J; Moreira, X; (...); Rodríguez, A

2025

PLOS ONE 20 (9)

Specialized plant metabolism, particularly phenolic compound production, contributes significantly to the functioning and resilience of mountain ecosystems. Livestock grazing can influence phenolic production, with its effects varying depending on microclimatic factors and soil conditions. Despite the ecological significance of this process, the impact of livestock grazing on phenolic (...)

Comparative studies of invasive *Elodea canadensis* Michx. in two climatically different regions

Prokopuk, M; Zub, L; (...); Marchante, E

2026

[AQUATIC BOTANY](#) 202

Elodea canadensis is a widespread invasive alien aquatic species in Europe. However, there is growing evidence that increasing anthropogenic eutrophication and other factors are leading to a decline in the populations of this species. We compared the structure of plant communities and the phenotypic plasticity of *E. canadensis* individuals across communities in Ukraine and

[Potential Protective Role of Amphibian Skin Bacteria Against Water Mold *Saprolegnia* spp.](#)

[Costa, S](#); [Proença, DN](#); (...); [Lopes, I](#)

2025

[JOURNAL OF FUNGI](#) 11 (9)

Amphibian populations have experienced a severe decline over the past 40 years, driven primarily by environmental pollution, habitat destruction, climate change, and disease. This work reports, for the first time, saprolegniosis in *Pelophylax perezi* egg masses and saprolegniosis in amphibians in Portugal. After isolation and phylogenetic analysis, the pathogen was identified (...)

[Opportunities and challenges for new technologies in seabird population monitoring](#)

[Frederiksen, M](#); [Layton-Matthews, K](#); (...); [Humphreys, EM](#)

2025

[ICES JOURNAL OF MARINE SCIENCE](#) 82 (9)

Monitoring of seabird population size and demography has for decades relied on observer-based methods. While such methods have allowed the accumulation of extensive, standardized time series, while typically involving both volunteer and professional observers, they often suffer from uneven coverage across species and locations, as well as limited replicability. Technological (...)

[Arthropod biodiversity in European crops: Representative taxa for pest control and pollination](#)

[Sowa, G](#); [Droge, STJ](#); (...); [Maltby, L](#)

2025

[ECOLOGICAL INDICATORS](#) 178

Arthropod biodiversity is critical for sustaining essential ecosystem services such as pest control and pollination, which underpin agricultural productivity. In Europe, agricultural intensification has led to significant changes in land use, contributing to the decline of terrestrial arthropods. This study quantifies the contributions of above-ground, non-target arthropods to these services (...)

[Acacia invasion triggers cascading effects above- and belowground in fragmented forests](#)

[Juan-Ovejero, R](#); [Reis, F](#); (...); [Alves, J](#)

2025

[NEOBIOTA](#) 100 , pp.345-369

Invasive alien plants like *Acacia* species are key drivers of ecosystem change, with considerable effects on forest structure, nutrient cycling, and biodiversity. In the Mediterranean region, which is already vulnerable to challenges such as anthropogenic forest fragmentation, *Acacia* species have become dominant invasive plants at the landscape scale. In this study, we explored the (...)

[Ecological networks reveal strong pest suppression complementarity between birds and bats within rice-dominated agroecosystems in West Africa](#)

[Chaves, PP](#); [Mata, VA](#); (...); [Timóteo, S](#)

2026

[AGRICULTURE ECOSYSTEMS & ENVIRONMENT](#) 396

The growing demand for rice across West African countries requires urgent pest control strategies that are costeffective and ecologically sustainable. Insectivorous birds and bats can act as biocontrol agents providing pest suppression services, reducing crop damage and potentially increasing yields. Here, we combined DNA metabarcoding and network analysis to (...)