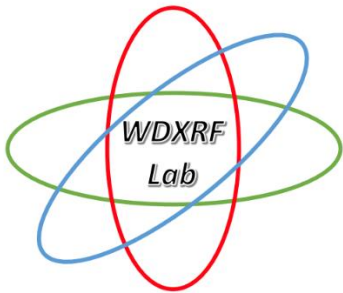




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| Laboratory Name | Wavelength Dispersive X-Ray Fluorescence Lab (WDXRF Lab) |
| Main Goals | <p>The main goals of the research activity currently developed at the Laboratory of Elemental Analysis by Wavelength Dispersive X-Ray Fluorescence are the following:</p> <ul style="list-style-type: none">- to assess elemental concentrations in animal tissues in the study of interactions between environmental exposures and bone diseases, and between diseases, such as osteoporosis and diabetes;- to use trace element concentrations profile determined by WDXRF in diseased and healthy tissues, in order to discriminate between healthy and diseased tissues and predict alterations in malignant tissue;- to study the relationships between environmental exposures to chemical and physical pollutants and mortality and morbidity in the Portuguese population;- to validate analytical techniques following ICH guidelines, for the assessment of impurities in pharmaceutical products, food supplements and herbal medicines. |



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| Lab Head | José Brito, PhD |
| Group | Alexandra Bernardo (PhD) Carlos Zagalo (PhD) Luísa Gonçalves (PhD) Luísa Zagalo (MsC) |



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| Senior Researchers | Alexandra Bernardo (PhD) Carlos Zagalo (PhD) José Brito (PhD) Luísa Gonçalves (PhD) |
| PhD Students | Luísa Zagalo |

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| Research Projects (from 2013) | <ol style="list-style-type: none">1. 2017 – 2020, “Design Molecular para Restauração Dentária” - FCT/P2020 24288. Fundação Ciência e Tecnologia, Portugal (Co-Investigator)2. 2015 – 2018, “Long-term effects of altered bone turnover on glucose metabolism.”. Egas Moniz – Cooperativa de Ensino Superior, CRL, (Principal Investigator)3. 2013 – 2016, “Investigation of type 1 Diabetes Mellitus as risk factor for secondary osteoporosis”. Egas Moniz – Cooperativa de Ensino Superior, (Principal Investigator)4. 2013 – 2015, “A molecular view of dental restoration” - PTDC/SAU-BMA/122444/2010, FCT, Portugal. (Co-Investigator) |
| Publications (10 most relevant, last 5 years): | <ol style="list-style-type: none">1. José Brito; Carlos Zagalo; Alexandra Bernardo; Luísa Gonçalves, “Quantitative analysis of air pollution and mortality in Portugal: current trends and links following proposed biological pathways” (2020), <i>Science of the Total Environment</i> (accepted, September 2020).2. Figueiredo, A.; Costa, I.M.; Fernandes, T.A.; Gonçalves, L.L.; Brito, J. (2020), “Food Supplements for Weight Loss: Risk Assessment of Selected Impurities”. <i>Nutrients</i> 2020, 12, 954.3. Joana Vasconcelos e Cruz, Mário Polido, José Brito and Luisa Gonçalves (2020), “Dentin bonding and SEM analysis of a new experimental universal adhesive system containing a dendrimer”, <i>Polymers</i> 2020, 12, 461; doi:10.3390/polym120204614. Joana Vasconcelos e Cruz, José Brito, Mário Polido & Luísa L. Gonçalves (2019), “A new experimental adhesive system containing G-IEMA – physicochemical properties”, <i>Journal of Adhesion Science and Technology</i>, DOI: 10.1080/01694243.2018.1539154 |

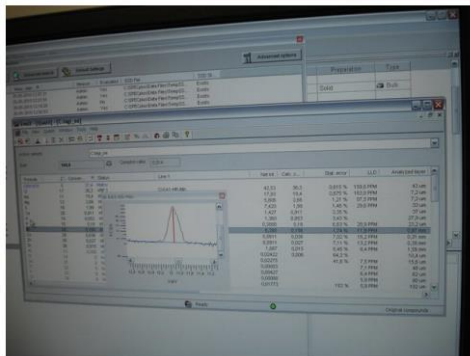
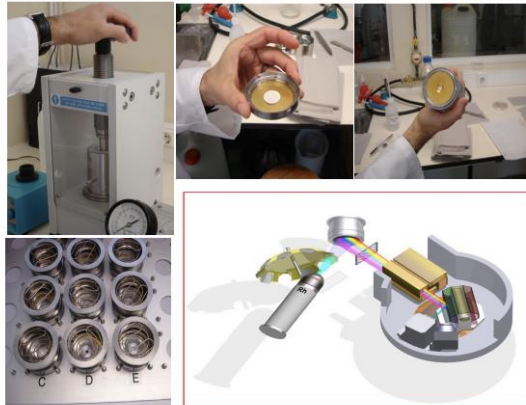


5. Tânia Fernandes, Luísa Gonçalves, Carlos Zagalo & José Brito (2019) Bone and the regulation of glucose metabolism, *Annals of Medicine*, 51:sup1, 49-49, DOI: 10.1080/07853890.2018.1561913
6. José Brito, Tânia Fernandes, Luísa Zagalo & Luísa Gonçalves (2019) Uncovering the links between osteoporosis and diabetes, *Annals of Medicine*, 51:sup1, 50-50, DOI: 10.1080/07853890.2018.1561914
7. Luísa L. Gonçalves, Tânia Fernandes, Maria Alexandra Bernardo, José A. Brito, (2018), Assessment of Human Health Risk of Toxic Elements Due to Cinnamon Ingestion in the Diet, *Biological Trace Element Research*, <https://doi.org/10.1007/s12011-018-1473-0>.
8. Tânia A. P. Fernandes, Luisa M. L. Goncalves, Jose A. A. Brito (2017), Relationships between Bone Turnover and Energy Metabolism, *Journal of Diabetes Research*, Article ID 9021314, <https://doi.org/10.1155/2017/9021314>.
9. Margarida Maria Moncada, Maria Alexandra Bernardo, Maria Leonor Silva, Ana Rita Jorge, Paula Manuela Pereira, José Américo Brito, Jaipaul Singh, Maria Fernanda De Mesquita (2017), Effect of cinnamon powder addition to a Portuguese custard tart (Pastel de Nata) on adult postprandial glycaemia among healthy subjects, *World Heart Journal*, 9 (2).
10. Alexandra Figueiredo, Tânia Fernandes, Isabel Margarida Costa, Luísa Gonçalves, José Brito (2016), Feasibility of wavelength dispersive X-ray fluorescence spectrometry for the determination of metal impurities in pharmaceutical products and dietary supplements in view of regulatory guidelines, *Journal of Pharmaceutical and Biomedical Analysis*, DOI: 10.1016/j.jpba.2016.01.028.

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| Equipment/Techniques | <ol style="list-style-type: none">1. Espectrómetro WDX para determinações elementares em sólidos, líquidos e pós soltos, na gama sub ppm a % - Designação: S4 Pioneer Bruker AXS; Marca: Bruker AXS; Modelo: S4 Pioneer; Fabricante: Bruker AXS.2. Prensa hidráulica para preparação de pastilhas de 2 cm diâmetro para análise po XRF - Designação: Prensa Hidráulica; Marca: SPECAC; Modelo: GS15011; Fabricante: SPECAC.3. Estufa para preparação de amostras - Designação: Estufa universal; Marca: MEMMERT; Modelo: UNE600; Fabricante: MEMMERT |
| Announcements | |



Some Pictures



Location

“Cozinha Experimental” Building

Links

<http://ciem.egasmoniz.edu.pt/pt-pt/research/research-labs.aspx>