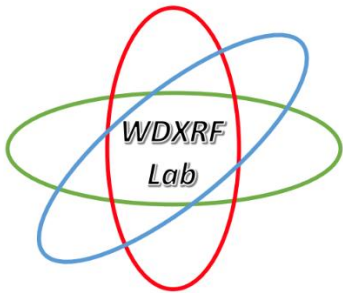




Laboratory Name	Wavelength Dispersive X-Ray Fluorescence Lab (WDXRF Lab)	
Main Goals	<p>The main goals of the research activity currently developed at the Laboratory of Elemental Analysis by Wavelength Dispersive X-Ray Fluorescence are the following:</p> <ul style="list-style-type: none">- to assess 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.	

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



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

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. Luísa L. Gonçalves, Tânia Fernandes, Maria Alexandra Bernardo, José A. Brito, Assessment of Human Health Risk of Toxic Elements Due to Cinnamon Ingestion in the Diet, Biological Trace Element Research, 2018, https://doi.org/10.1007/s12011-018-1473-0.2. Joana Vasconcelos e Cruz, José Brito, Mário Polido & Luísa L. Gonçalves (2018): A new experimental adhesive system containing G-IEMA – physicochemical properties, Journal of Adhesion Science and Technology, DOI: 10.1080/01694243.2018.15391543. José Brito, Véronique Sena, Carlos Zagalo, Luísa Gonçalves, and Alexandra M. Silva, Investigation of type 1 Diabetes Mellitus as risk factor for secondary Osteoporosis, Second CiiEM Congress: Research and Innovation in Human and Health Sciences, Monte de Caparica, 11-13 June 17, Annals of Medicine, 50:sup1, S16, DOI: 10.1080/07853890.2018.14274454. A. Figueiredo, I. M. Costa, T. Fernandes, L. L. Gonçalves and J. Brito, WDXRF Spectrometry for elemental impurities analysis in drug products



and dietary supplements, Second CiiEM Congress: Research and Innovation in Human and Health Sciences, Monte de Caparica, 11-13 June 17, *Annals of Medicine*, 50:sup1, S37, DOI: 10.1080/07853890.2018.1427445

5. 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>.

6. 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).

7. 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.

8. Bernardo M.A., Silva M.L., Santos E., Moncada M.M., Brito J., Proença L., Singh J., and Mesquita M.F. (2015). Effect of Cinnamon Tea on Postprandial Glucose Concentration. *Journal of Diabetes Research*. Volume 2015. Article ID 913651.

9. Bruno Miguel Vida; Rita Cascão; Ana Catarina Vale; Inês Cavaleiro; Maria Vaz; José Brito; Helena Canhão; João Fonseca (2015), "Arthritis induces early bone high turnover, structural degradation and mechanical weakness", *PLOS ONE*, DOI:10.1371/journal.pone.0117100.

10. Brito, José A; Costa, Isabel M; e Silva, A. M; Marques, José M; Zagalo, Carlos M; Cavaleiro, Inês I; Fernandes, Tânia A; Gonçalves, Luísa L. (2014), "Changes in bone Pb accumulation: Cause and effect of altered bone turnover", *Bone*, 64: 228 – 234.

Equipment/Techniques

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 por XRF - Designação: Prensa Hidráulica; Marca: SPECAC; Modelo: GS15011; Fabricante: SPECAC.

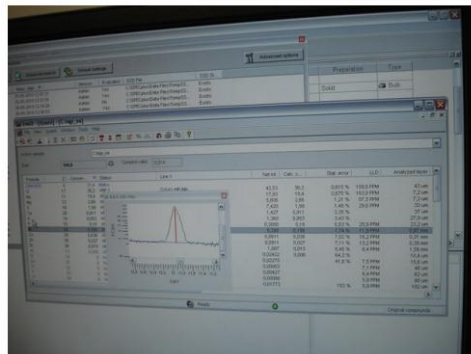
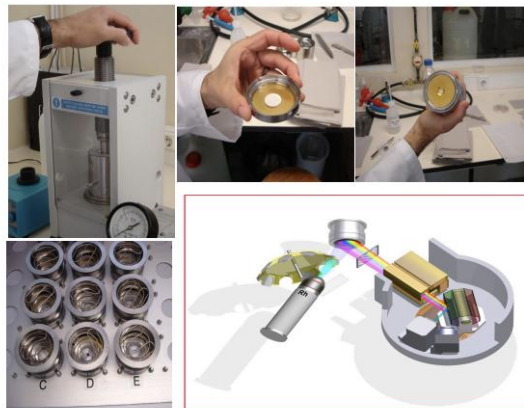
3. Estufa para preparação de amostras - Designação: Estufa universal; Marca: MEMMERT; Modelo: UNE600; Fabricante: MEMMERT



Announcements



Some Pictures



Location

“Cozinha Experimental” Building

Links

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