

Name Participants of WG3	Fernando Antunes
Affiliation	Department of Chemistry and Biochemistry, Faculty of Sciences University of Lisbon Portugal
Scientific expertise, up to 5 key words	Hydrogen peroxide; redox signaling, mathematical modeling, thermodynamics, metabolism
Motivation for participation in WG3	To develop a blood biomarker with the potential to detect adaptive processes that precede the onset of diseases and to monitor therapy efficacy. This novel biomarker measures the overall fitness of cells, could be used to follow the efficacy of NRF-2 lead agents.
Short narrative biosketch, including scientific background/ education/major achievements etc.	Associate Professor at Universidade de Lisboa, Fernando (PhD in Biochemistry) was Research Associate at University of Southern California (USA) and Visiting Researcher in the Linköping (Sweden) and Matsuyama (Japan) universities where he investigated the toxicology of hydrogen peroxide. He has over 70 publications, some in the top 1% in terms of impact, collecting over 6000 citations from peers, mostly in the field of redox regulation, with particular emphasis in hydrogen peroxide metabolism, redox signaling and development of novel oxidant delivery nanomaterials.
Current research topics/ongoing projects	Measure heat dissipation to monitor the fitness of living cells and probe resource allocation tradeoffs between proliferation and maintenance/stress response. As a member of the Observatory SME Expert Group at European Union Intellectual Property Office, and co-founder of the university spin-off Delox, Fernando is also actively involved in the economic valorization of scientific and technological knowledge.
Nfr2-related methodologies/ infrastructure/ equipment	Research methodologies employed by Fernando combine mathematical models with experimental approaches based on quantitative biology. Kinetics of H ₂ O ₂ consumptions and formation; development of nonporous materials, measurements of heat dissipation. Equipment: H ₂ O ₂ electrode; calorimeter.
Available sample collections/datasets; interested in sharing; yes/no	
Available cohorts/ ongoing/planned human studies/grant applications	
Interested in STSM: outgoing/hosting (year 1/later); yes/no	Year 1 and later/Hosting