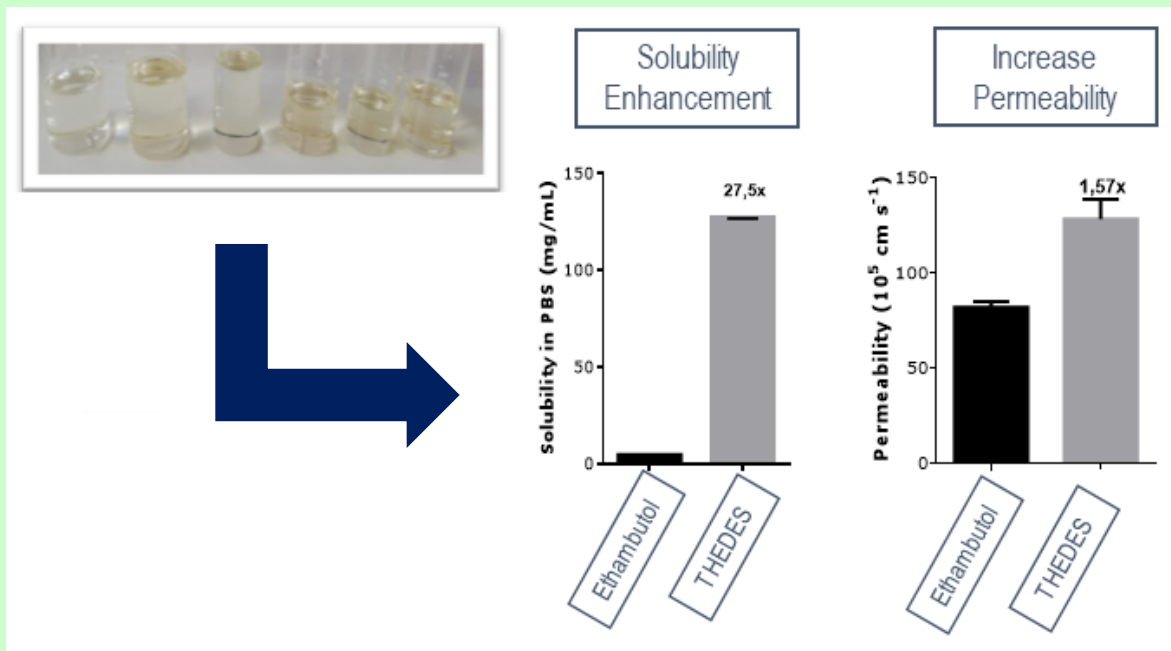


Ongoing work

One of the research studies that is being carried out in the ambit of Des.solve is about “Properties of therapeutic deep eutectic solvents (THEDES) of L-arginine and ethambutol for tuberculosis treatment”. The graphical abstract of this work (below) shows a clear increase of the solubility and permeability of ethambutol in the presence of THEDES, which are very promising results in the area of tuberculosis treatment.



Food for thought

Des.solve group is promoting regular brainstorming sessions with researchers from external institutions, to discuss new ideas about DES applications and new partnerships.

The first invited researcher was Liane Moura (Post-Doc Fellow at iMed.Ulisboa - Faculty of Pharmacy, University of Lisbon), who is focused on the development of nanovaccines and characterization of the immune modulatory effect in melanoma and breast cancer mouse models.

Participation in conferences

- IUPAC Postgraduate Summer School on Green Chemistry, Venice, Italy
- 7th EuCheMS Chemistry Congress, Liverpool, United Kingdom
- 10th EuCheMS Organic Division Young Investigators Workshop, Oxford, UK
- Biobarriers 2018, Saarbrücken, Germany
- Workshop "Valorising field wastes - the next steps?", Nottingham, UK

Publications

- Vânia Castro, Francisca Mano, Rui L. Reis, Alexandre Paiva, Ana Rita C. Duarte, “Synthesis and Physical and Thermodynamic Properties of Lactic Acid and Malic Acid-Based Natural Deep Eutectic Solvents”, *Journal of Chemical Engineering Data – Special Issue Emerging Investigators*, **2018**, *63* (7), pp 2548–2556, DOI: 10.1021/acs.jced.7b01037
- Joana M. Silva, Rui L. Reis, Alexandre Paiva, Ana Rita C. Duarte, “Design of functional therapeutic deep eutectic solvents based on choline chloride and ascorbic acid”, *ACS Sustainable Chemistry & Engineering*, 2018, DOI: 10.1021/acssuschemeng.8b01687
- Vânia Castro, Joana M. Silva, Rita Craveiro, Rui L. Reis, Alexandre Paiva, Ana Rita C. Duarte, “Natural deep eutectic systems as alternative nontoxic cryoprotective agents”, *Cryobiology*, June 2018, DOI: 10.1016/j.cryobiol.2018.06.010
- Rita Craveiro, Francisca Mano, Alexandre Paiva and Ana Rita C. Duarte, Deep Eutectic Solvents: exploring their role in Nature, in *Deep Eutectic Solvents – Synthesis, Properties, and Applications*, Eds Gabriella Guillena and Diego Ramón, Wiley (in press)
- WO/2018/211454 patent application, Castro V., Silva J. M., Craveiro R., Reis R. L., Paiva A., and Duarte A. R. C., Cryoprotectant and/or cryopreservant composition, methods and uses thereof, published on 22/11/2018

Do you know...

That China is the country that most publishes in the field of DES, but, in terms of relative number *per capita*, Portugal has 23 more publications per capita than China?

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