108-022

LUMINESCENT IONOGELS APPLIED TO DRUG DELIVERY

Ramos, T.J.S.(1); Gonçalves, A.B.(1); Alves, I.B.V.(1); Cassol, T.(2); Junior, S.A.(1);
Universidade Federal de Pernambuco(1); UFPE(2); Universidade Federal de Pernambuco(3); Universidade Tecnológica do Paraná(4); UFPE(5);

Introduction Ionic liquids (ILs) can be called as organic salts which have a melting point below 100 °C. They are build of ions, and have very different properties of molecular liquids[1]. ILs can be used to develop several materials, such as gels, thus forming ionogels[1],[2]. Ionogels are interesting for the carrying of drugs due exhibit high chemical and thermal stability with controlled release kinetics, the dissolution ability of poorly water soluble drugs and also to present high hydrophilicity[3] . Drug delivery systems is bound to a carrier, which is involved due to the limiting properties of the encapsulated drug, favoring maximization of therapeutic effect control of the absorption and reduce local toxicity. Controlled drug delivery systems have advantages such as controlling the release of the active principle, reducing the appearance of toxic and subtherapeutic doses; among others. The proposed ionogels, for the carrying of drugs, are made from lanthanide ions coordinated ionic liquids. Are used lanthanide ions due to intense emission in the visible region of the spectrum, which makes the compound designed to act as a structural probe. Thus, the system ionogel@drug conjugated is potentially capable of linking the drug carrier of the biosensor performance due to luminescence of lanthanide ions in the visible region of the electromagnetic spectrum. This work aims to use luminescent gels as carriers of drugs for the treatment of arthritis that is a major musculoskeletal disorders, and features more than 100 subdivisions. Its appearance involves genetic, organic, occupational and environmental factors. Results and Discussion The methodology used t: the drug merger agreement is being evaluated, according to the methodology in situ, conditioned by agitation at 1, 3 or 7 days. Structural characterization and photophysics were held FTIR measurements, photoluminescence, and NMR for the ionic liquid (IL), the drug (curcumim) of europium and terbium of ionogéis, and the system composed of the ionogel@curcumim. However, due to the small scope of this resume will be presented only results about the photoluminescence the IL. The excitation spectrum shows the presence of a band centered at 350 nm, related to the ? ?* transition assigned to ligand IL[4] . The deactivation promotes the formation of a band at 475 nm which can be perceived in its emission spectrum. The difference between the maximum of the emission and excitation peaks is 75 nm. The emission and the excitation spectrum for the EuIL/TbIL compounds shows the typical transitions to the trivalent ions. The figure 2 presents the photoluminescence results for EuIL, where is reported the transition 5D0?7F0, what suggests the deafult of inversion center to for chemical environment Eu3+, which reduces the symmetry around the ion in point symmetry groups C1, Cn, Cnv e Cs. The symmetry environment around the Eu3+ was determined by theoretical calculations with software LUMPAC. This teorical aproach also promotes the calculation of spectroscopic properties (Arad, Anrad, R2/0, ?, ?). Conclusions We concluded that an efficient method for obtaining luminescent gels was developed from a room temperature without solvent or stirring. The synthesized material showed excellent photophysical properties. Is being developed as well, a merger protocol curcumim drug to ionogels (forming the system ionogel@curcumim). Acknowledgements We thanks the research support units: CAPES/CNPQ/FACEPE, and the analytical center of the Fundamental Chemistry Department-UFPE.

_____ 1. Dalton Trans., 2009. 0: p. 298–306. 2. Chem. Commun., 2010. 46: p. 228–230. 3. ChemPhysChem 2013. 14: p. 3454 – 3457. 4. Dyes and Pigments 2011. 88: p. 262-273. 5. Coordination Chemistry Reviews, 2015. 295: p. 1–45. 6. Inorganic Chemistry, 2012. 51: p. 12867?12878. 7. Journal of Materials Chemistry C, 2015: p. 1-10.