

Title: **Amino acid-based surfactants: synthesis and characterization.**

Student: M^aDolores Navas Gil

Date: September 2020

Supervisor/s: Dra. Aurora Pinazo Gassol

Dra. Lourdes Pérez Muñoz

Department of Surfactants and Nanobiotechnology, IQAC-CSIC

Dr. Jordi García Gómez

Department of Inorganic and Organic Chemistry, University of Barcelona

Surfactants are chemical products found in many different industries (alimentary, cosmetic, pharmaceutical, etc) and also consumed in large quantities around the world in everyday life. Therefore, nowadays the research in surfactants is increasing in order to replace the conventional petrochemical-based surfactants with those based on renewable sources. Amino acid-based cationic surfactants constitute a novel class of multifunctional surfactants with beneficial properties such as a low toxicity profile, a high biodegradability and a broad antimicrobial activity.

In this report, on the one hand, it has been done a bibliographic study of some methods of synthesis of different amino acid-based single chain surfactants derived from arginine and, on the other hand, three arginine based-surfactants have been synthesized and purified. The synthesized surfactants have been characterised by using different techniques like nuclear magnetic resonance (NMR) or mass spectrometry (MS).

Keywords: Surfactants, renewable sources, amino acid-based, arginine-based, nuclear magnetic resonance, mass spectrometry.