



LIFE13 ENV/IT/000470 "ECODEATTING"
Environmentally friendly natural products instead of chemical products in the degreasing phase of the tanning cycle



Action A2 of the project
Demonstration of natural products

Beneficiary responsible for implementation: Unifi

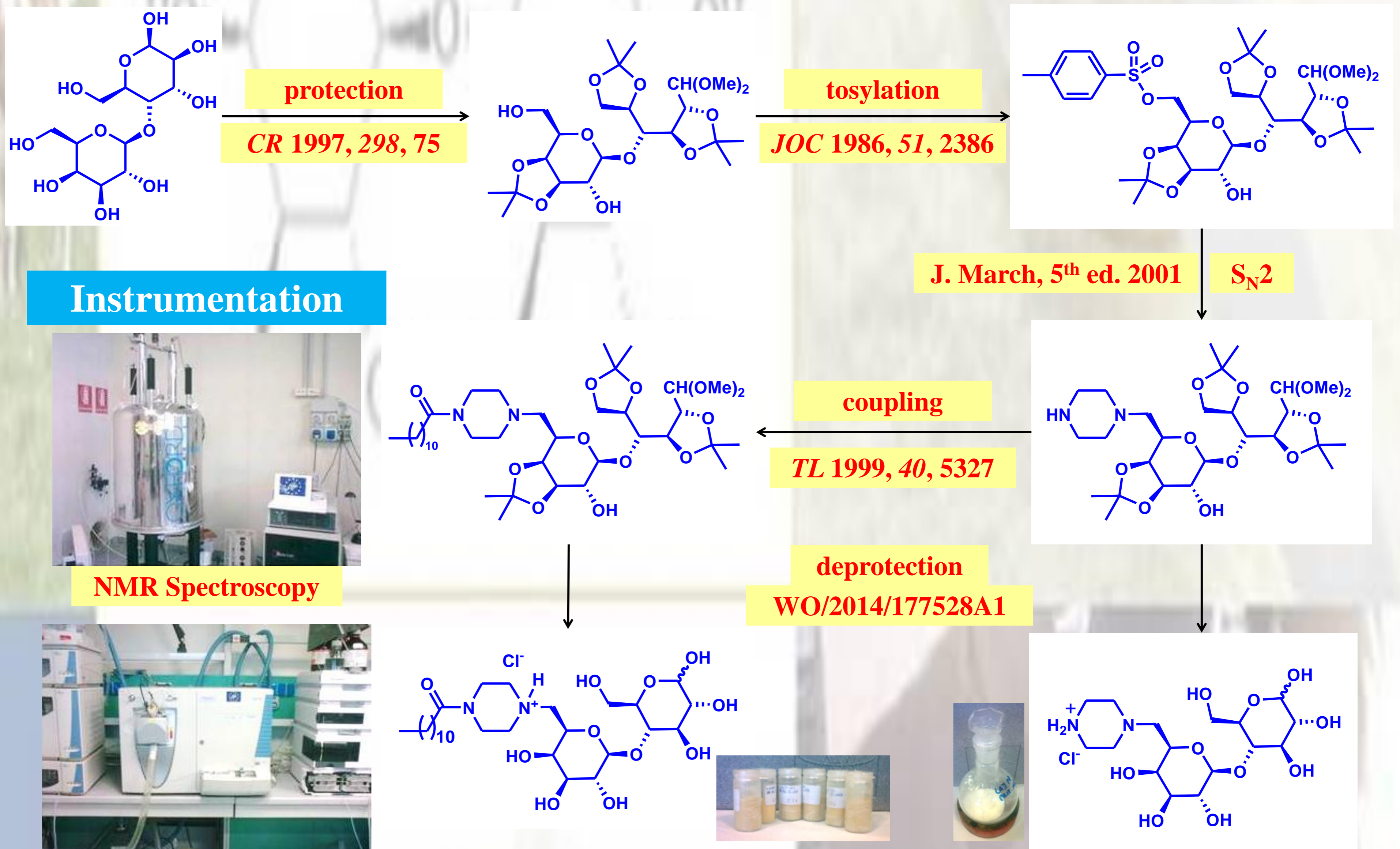
Duration
 01.10.2014 to 30.09.2016

Total Budget
 € 1,035,556.00

EU contribution
 € 517,778.00

Naturally occurring lactose was elaborated to achieve new active ingredients, to formulate defatting agents alternative to current commercial products. The synthetic strategy was based on a key one-pot protection of six of the eight hydroxy groups and on a regioselective elaboration of the remaining primary hydroxyl radical in the presence of a secondary alcohol.

Synthetic strategy



Instrumentation



NMR Spectroscopy



Mass Spectrometry

Coordinating beneficiary



Chemical Department
"Ugo Schiff"
Florence University (IT)

Associated beneficiaries



Chemical Institute of organometallic compounds of CNR (IT)



Newport Srl (IT)



Asociación de Investigación para la industria del calzado (ES)

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Remarks

Protection



Lactose dissolves during the course of the reaction.

Tosylation



Product must be treated with base to assure stability.

S_N2



Inverse addition of tosylate to piperazine to achieve method reproducibility.

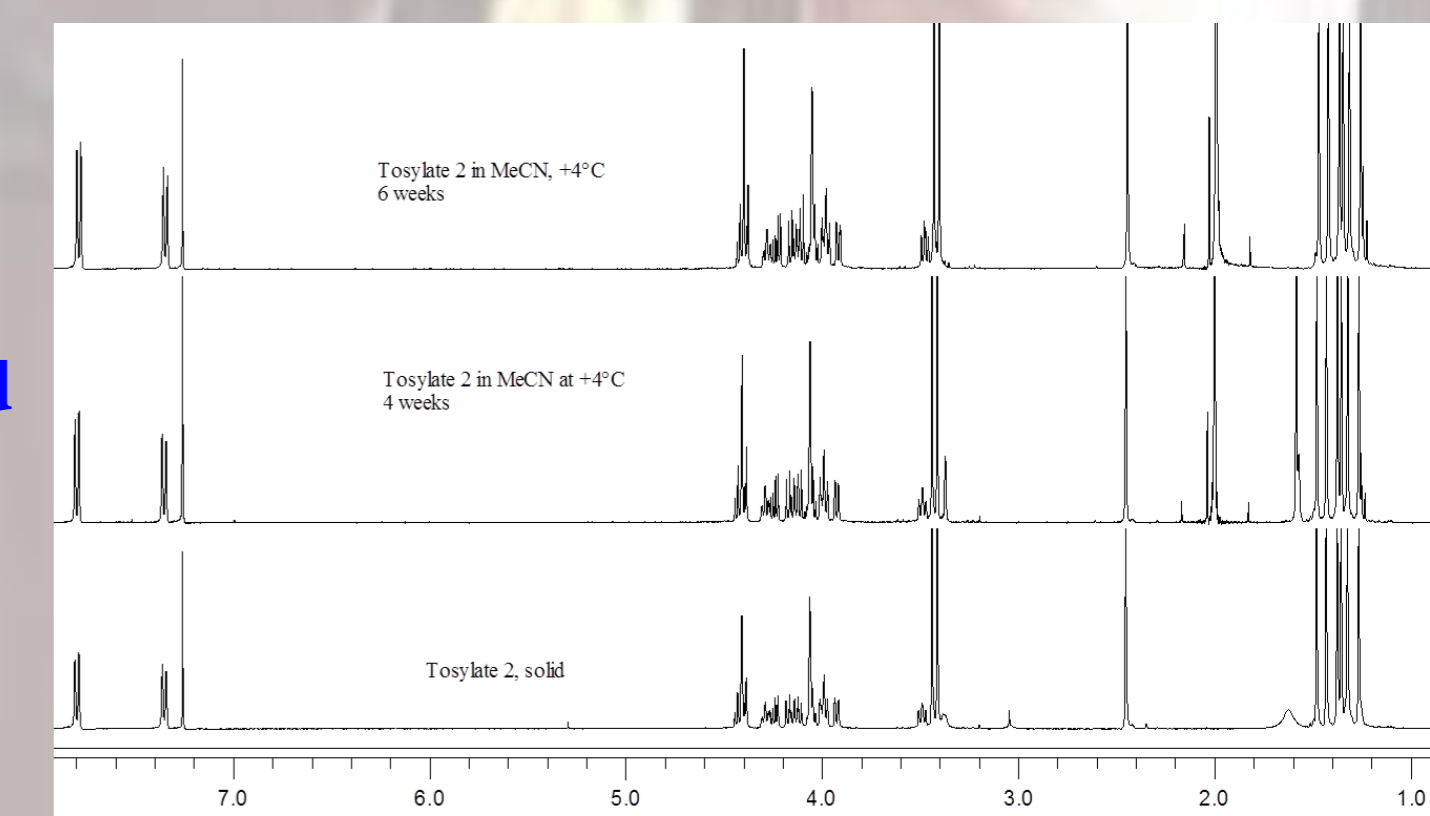
Deprotection

Reaction must be carried out in the presence of aq. HCl in acetone. The reagent must be prepared by dissolving cold conc. HCl in cold acetone under stirring.

Product crystallized and filtered.



Product stored at +4°C.



Stability demonstration of tosylate via NMR.