Expoziția Internațională Specializată „INFOINVENT”, Ediția a XVIII-a, 22-24 noiembrie 2023

Institutul Naţional de Cercetare Dezvoltare "Victor Babeş"Bucuresti

NOVEL PROCESS OF PREPARATION AND CHARACTERIZATION OF SAPROPELIC MUD EXTRACT "PELL AMAR“

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RO133249A2/30.04.2019

Fields of application: Medicine

The invention relates to a process for preparing an active product from sapropelic mud to be used in the treatment of rheumatoid arthritis and other chronic inflammatory diseases.

According to the invention, the process consists in preparing aqueous sapropelic mud extract, filtering the extract and bringing the filtered extract into solid state by lyophilization in two stages, a main lyophilization stage, under pre-freezing conditions at -20^{0}C, a pressure of 0,04 mbar, a temperature of -50^{0}C, and a final lyophilization stage at a pressure of 2.6 mbar and temperature of -10^{0}C, followed by extract sterilization by irradiation with γ radiation, between 10 and 25 kGy, to result in a product having microbiological and pharmacological characteristics suitable for it to be used as an anti-inflammatory product.

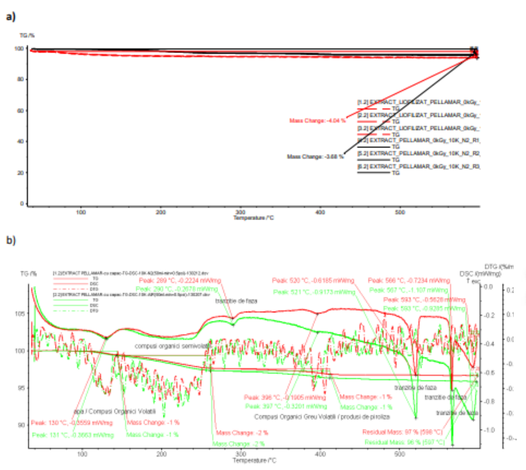

Fig 1. Characterization of the product composition by TG-DSC thermal analysis: (a) freeze-dried versus atomized extract; (b) in inert and oxidizing atmosphere

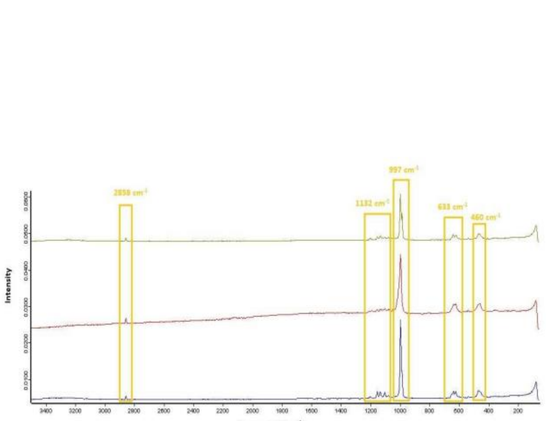

Fig 2. Comparative Raman spectra for sapropelic mud (green), Pellamar extract (red) and freeze-dried Pellamar extract (blue)

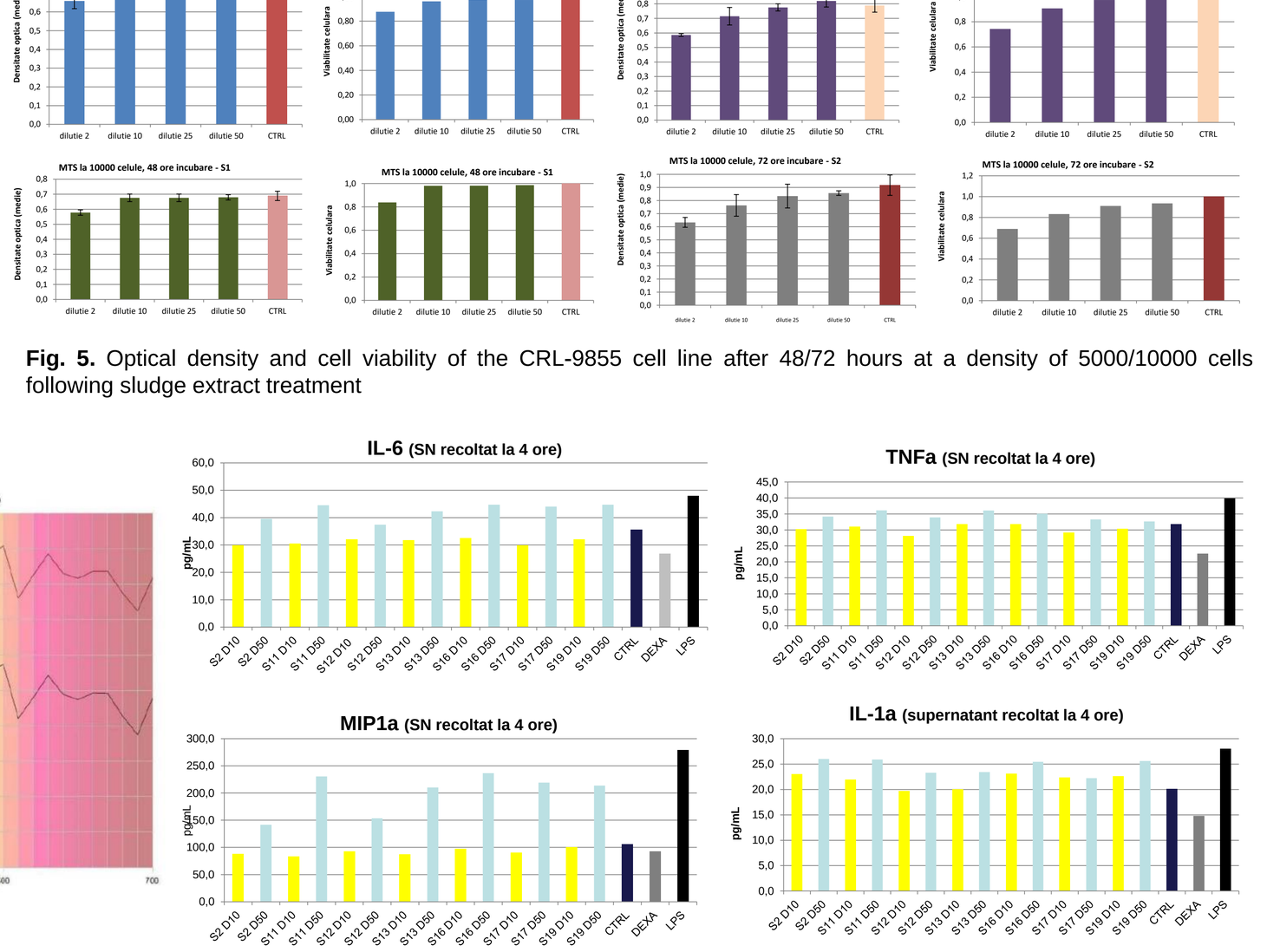

Fig. 5. Optical density and cell viability of the CRL-9855 cell line after 48/72 hours at a density of 5000/10000 cells following sludge extract treatment

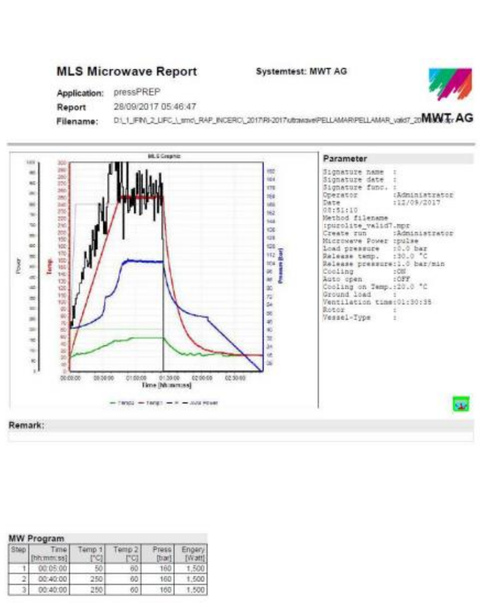

Fig 3. Diagram of the automated digestion process

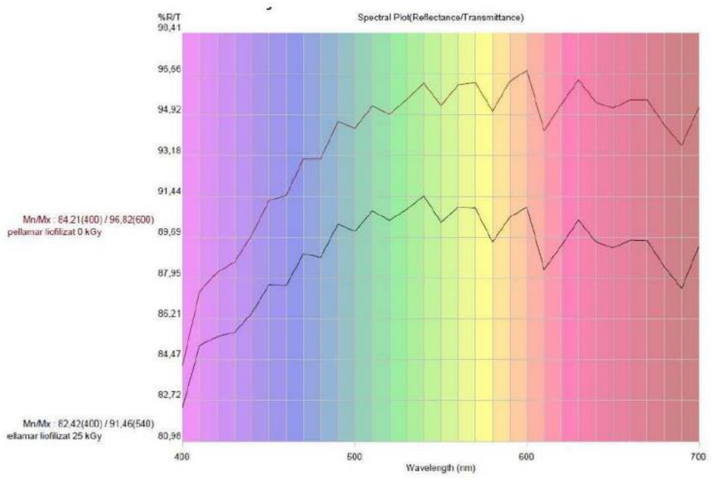

Fig 4. Reflection spectra of Pellamar lyophilized samples, non-irradiated and irradiated at 25 kGy

Fig 6. The concentration level of the pro-inflammatory cytokines (IL-6. TNFa, MIP1a, IL-1a) in the supernatants from cells treated with sapropelic mud extract, versus control, control with dexamethasone and control with LPS. The data represent the mean values obtained from duplicate analysis.

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