

CHEMOMETRICS STUDY OF GERMS PLANT FOR DETERMINING THE ANTICANCER ACTIVITY

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Abstract

This project started from the premise that in nature, there are substances capable of preventing the occurrence of cancer, or, at least keeping it in its early stages, by using plant germs.

Germs were obtained from Biovita germs machine, like: watercress, unshelled and genetically modified soybeans, hyssop, sage, fennel, amaranth, broccoli, radish, alfalfa, cumin, caraway, rye, wheat, buckwheat, and the next step was to extract the substances from these germs, and analyzed by LS/MS, for the identification of polyphenolic compounds, which are antioxidants, which play a very important role in the prevention of cancer, mainly alpha-linolenic acid, the main source of omega 3 fatty acids, essential for the human body.

The process was carried out in several stages, namely: the germination period was 4-5 days, followed by maceration in hydroalcoholic solution with 99% ethyl alcohol, then the decoction and percolation in the system provided with separating funnel, filter and Erlenmayer glass.

The antioxidant activity was determined using spectrophotometry (Tecan Sunrise™ – A Reliable Absorbance Reader), using as a calibration sample, ascorbic acid, the absorbance of which was already known from the literature data, namely 600 nm. The presence of riboflavin, at an absorbance of 440 nm, allantoin, 517 nm, quercetin, at an absorbance of 385 nm, choline, at 570 nm, and thiamine at an absorbance of 520 nm, was identified. The calibration curve was obtained based on the values of the concentrations used and the absorbance obtained. The scavenging was determined, on the basis of which the antioxidant activity was identified.