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Optimization of double sandwich ELISA for milk quality control during storage

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The study was aimed to quantify the β -CN the milk storage at low temperature, a double sandwich ELISA was optimized for the determination of bulk milk taken at factory of GIPLAIT (Sidi-Bel-Abbes). The times selected for analysis were 8, 16, 24 and 32 hours at 4°C. The study has been conducted in three steps; the first one concerned the production of polyclonal Ab anti β -CN via rabbits. The second step concerned the production of polyclonal Ab anti β -CN via mouse and the last one focused on the indirect ELISA technique. Standardization of the various reagents used in the determination of β -CN has allowed us to use the double sandwich ELISA method for the control of milk quality were used (1/75 antiserum (AS) mouse, 1/750 for AS rabbit and 1/3000 for the conjugate ego at alkaline phosphatase) to check the sensitivity and specificity of our test. Different samples at different storage time were performed with appropriate dilutions in dilution PBS buffer. The results are in favor of a degradation of β -CN. They showed that indeed the simple milk cooling at low temperature is sufficient to substantially alter the physicochemical characteristics, mainly its micellar structure and salt balances. These changes may have negative consequences on manufacturing products such as cheese with loss of yields and organoleptic defects. A calibration curve was established then used for quantification of β -CN. Results were in favor of the latter to degradation during storage of milk. Thus the concentrations of beta-casein were 10, 9.60, 9.05, 8.60 and 8 g.L⁻¹.

Argyrea nervosa: Conservation, isolation and characterization of immunomodulatory compounds

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Indian folklore has given many promising medicines to the present world. The plant source have been used for treating various diseases and disorders and some of these plants are highly exploited which might have led to their extinction. It is a popular Indian medicinal plant. Some present day studies suggest that the plant is used for nootropic, aphrodisiac, immunomodulatory, hepatoprotective, antioxidant, anti-inflammatory, antihyperglycemic, antiarrheal, antimicrobial, antiviral, nematicidal, antiulcer, anticonvulsant, analgesic and central nervous depressant activities. A wide range of phytochemical constituents has been isolated from this plant and none has reported the compounds responsible for immunomodulatory activity. There is a primary study by Gokale et al in 2003 stating the immunomodulatory activity of *A.nervosa*. The plant is more known for its highest concentration of psychoactive compounds and the seeds are banned in some countries. Therefore the cultivation and studies of this plant is not preferred. The researchers have shown lot of interest in last few years on this plant keeping in view its pharmacological importance. The popularity of the plant lies in its compounds with hallucinogenic properties and hence the pharmacological studies were mostly conducted on anti-amnesic, nootropic properties. The incidence of diseases have increased a lot in the last decade due to many new infectious agents, pollution, lack of hygienic conditions, balanced diet etc. The support of immunostimulatory compound is always there during the treatment. The organ failures and their transplantation have also increased recently and there is a need for a potent immunosuppressant in the process. The generally available compounds are mostly chemically synthesized and there is dearth for naturally produced molecules of similar activity. The plant being a rich pool of secondary metabolites is also reported to be endangered and we therefore proposed to work on conservation and isolation of immunomodulatory compounds from *A. nervosa*.