بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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MONA MAGHRABY

BIOLOGICAL ACTIVITY OF CAMEL MILK PROTEINS

By

MARWA MOHSEN YOUSEF HASSOUBA

B.Sc., Agric. Sc. (Dairy Science and Technology), Fac. Agric., Ain Shams Univ., 2007

M.Sc., Agric. Sc. (Dairy Science and Technology), Fac. Agric., Ain Shams Univ., 2013

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ABSTRACT

Marwa Mohsen Yousef Hassouba: Biological Activity of Camel Milk Proteins. Unpublished Ph.D. Thesis, Department of Food Science, Faculty of Agriculture, Ain Shams University, 2020.

The liver disease in all over the world had a more attention towards the prevention methods; balanced diet can be effective and protective. Therefore, the objective of this study was to produce and investigate the hepatoprotective role of some camel milk products (camel milk; fermented camel milk (probiotic product); the aqueous extract of dandelion leaves (prebiotic product); fermented camel milk fortified with dandelion leaves aqueous extract (synbiotic product); camel whey proteins and camel casein) male albino rats.

Physicochemical composition; total phenolic contents and some minerals contents of the tested products were determined. The degree of antioxidant activity was measured, and sensory properties were evaluated of the synbiotic product (fermented camel milk fortified with dandelion leaves aqueous extract) in the ratio of 1, 3 and 5%. Also, the effect of cold storage at (-5±1ºC for 21 days) on microbiological quality, viscosity, pH and water holding capacity (WHC) the tested products were measured.

Sixty-four experimental male albino rats were allocated into eight groups. First group was kept as normal control (NC), while other seven groups were injected intraperitoneal in beginning of the experiment with single dose from (CCl_4); one of them kept as liver injury group (IC). Nevertheless, the rats in groups from 3 – 7 received orally the following products: camel milk; fermented camel milk (probiotic product); the aqueous extract of dandelion leaves; synbiotic product and whey camel milk, respectively. While, group eight received formulated basal diets which protein was replaced by 20% camel casein. All rats were fed for 45 days.

The result showed significant differences in physicochemical composition of camel milk, probiotic and synbiotic products. Also, the results revealed that analysis of probiotic and synbiotic, which manufactured from camel milk, had significant differences of microbiological count, pH, viscosity and WHC during storage period.

The results indicated that all studied products exhibited scavenging activity. Also, the results show that group 2 (IC) revealed significantly increased in alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALKP) and malondialdehyde (MDA) levels; whereas, decreased in body weight gain, albumin and glutathione (GSH) levels. While, use of camel milk; probiotic; prebiotic; synbiotic; camel whey protein and camel casein resulted significant improvement in weight gain, liver function and oxidative stress parameters.

Histological examination of hepatic liver showed more alteration due to (CCl_4) induced hepatocellular damage in all injected groups (from group 2 to 8). While all studied products suppress the alteration in liver histology.

It could be concluded that the camel milk; fermented camel milk (probiotic product); aqueous extract of dandelion leaves (prebiotic); fermented camel milk fortified with the aqueous extract of dandelion leaves (synbiotic product); camel whey protein and camel casein can be used as ingredients in functional foods for hepatoprotective.

Key Words: Camel milk, Probiotic, Whey proteins, Dandelion, Liver injury, Rats.

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