

607

**EFFECT OF NUCLEOTIDES ON SOME NUTRITIONAL PARAMETERS
OF MICE**

C
574-192
SUG

A PROJECT REPORT PRESENTED BY

D.M.SUMANGALA SUGEESHWARI

to the Board of Study in Biochemistry and Molecular Biology

POSTGRADUATE INSTITUTE OF SCIENCE

*in partial fulfillment of the requirement
for the award of the degree of*

MASTER OF SCIENCE IN EXPERIMENTAL BIOTECHNOLOGY

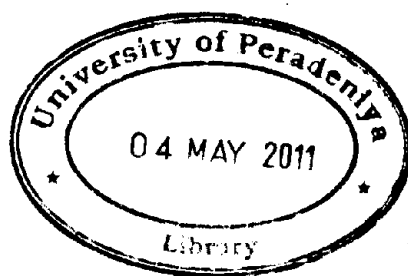
of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2010

648319



EFFECT OF NUCLEOTIDES ON SOME NUTRITIONAL PARAMETERS OF MICE

D.M.S.Sugeeshwari

Department of Biochemistry

Faculty of Medicine

University of Peradeniya

Peradeniya

Sri Lanka

Nucleotides are the basic building blocks of life. Nucleotides are conditionally essential nutrients. Other than the role in genetics and protein synthesis, nucleotides also play a major role in almost all biological processes. Therefore dietary nucleotides have become increasingly popular as feed additives in recent years due to their numerous health benefits. NuPro® is a commercial animal feed additive rich in nucleotides derived from the yeast strain *Saccharomyces cerevisiae*. The aim of this study was to determine the effect of addition of NuPro®, on some nutritional and biochemical parameters of mice. Thirty-two, female, sixteen to twenty-week-old, Balb/C mice were assigned randomly into eight groups of four. All mice were fed with broiler starter ration *ad libitum* for a period of one month. NuPro® was added to the diet of four groups of on a completely randomized basis, at a concentration of 4%, which served as the test diet. The other four groups were fed with the control diet which contained 4% processed Soya. Body weights were recorded throughout the experimental period. Serum biochemical parameters including total cholesterol, HDL cholesterol, total protein, albumin levels and antioxidant activities were determined using diagnostic kits. A differential count of white blood cells was also performed. NuPro® supplementation significantly decreased the total serum cholesterol level of test group mice ($P < 0.05$). Both serum HDL level and total cholesterol/HDL ratio were not significantly affected by NuPro® supplementation. Total serum protein and serum albumin

concentrations of mice were not significantly affected by NuPro® supplementation. An improvement of the bodyweight gain was observed in test group mice but with no statistically significant difference. Addition of NuPro® significantly increased the lymphocyte count of test group mice while the counts for other white blood cell types remained unaffected. It was concluded that inclusion of dietary nucleotides (NuPro®) to the feed of mice had a positive influence on some biochemical and immunological indices of blood and seems to be a suitable functional feed additive from production and animal health point of view.