



## SUPPLEMENTARY EFFECT OF VITAMIN E ON IMMUNE RESPONSES AGAINST STAPHYLOCOCCUS AUREUS

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### Abstract

Vitamin E is essential for growth and immunity of higher organisms. In this study effect of vitamin E on immune response against staphylococcus aureus was studied. Graded level of vitamin E provided to albino rats then the pathogen was injected. Finally Maximum immune response was observed in 900mg and 1200mg treatment compared to other treatment. The immune response increased up to 900 mg treatment..So this level is optimum range to induce maximum immunity against Staphylococcus aureus infection.

**Keywords:** *Vitamin E, Staphylococcus aureus immune response*

## **1. INTRODUCTION**

Dietary supplementation of certain vitamin may be effective means of increasing the immune competency and disease resistance of fish (Li and Lovell, 1985) vitamin E is the primary lipid soluble anti-oxidant in cell membranes that protects the unsaturated bonds of fatty acids against oxidative damage (Lucy, 1972, Nik,1981) Supplementary level of vitamin E in the diet of farm animals have been shown to enhance humoral and cellular immune response and increase the disease resistance(Tengerdy,1990) In this study supplementary effect of vitamin E on immune responses against staphylococcus aureus was studied.

## **2. MATERIALS AND METHODS**

Staphylococcus aureus pathogens were collected from local hospital lab then routine microbiological and biochemical tests were carried out for confirmation. Graded level of Vitamin E ( $\alpha$  tocopheral) such as -0,300,600,900 and 1200mgwas provided in various group of albino rats. After two weeks. Inactivated staphylococcus aureus pathogen ( $10^{-4}$ ) was injected to all the albino rats. For inactivation of pathogen, 0.5% formalin was used and also pathogen wee incubated overnight at 4\*c At the end of the experiment, blood samples were collected in all albino rats for analysis.

## **3. RESULTS**

Vitamin E is a good immuno stimulant. In this study, five treatment including control was tested. The maximum immune response was observed in 900mg and 1200 mg treatment. The minimum amount of WBC count was observed in control treatment. The polymorphic neutrophill count and PCV level was slowly increased up to 900mg vitamin E treatment. The RBC count was more or less in all the treatments. The antibody level was increased up to 900mg treatment. After theselevel immune response reaches standard level. Based on this study, it is concluded that 900mg treatment is optimum range to produce maximum immune response against Staphylococcus aureus infection.

## **4. DISCUSSION**

In recent years Vitamin E has been demonstrated to be important for their immune response of various species of animals in which it appear to influence both humoral and cellular factors. Supplementary vitamin E enhanced antibody production against a

variety of particular or soluble antigens by promoting increased proliferation of antibody producing cells (Tenderly *et al.*,1973) Reactive oxygen species in vitamin E deficient animals have been shown to adversely affect the activity of lymphocytes and phagocytic responses of macrophages and neutrophils (Tengerdy,1990). In this study maximum immune responses was observed in 900mg and 1200mg vitamin E treatment

The immune responses attain standard level after 900 mg treatment.. So it is concluded that the saturation point is 900mg treatment. So it is concluded that. These level is optimum range to produce maximum immune response against *Staphylococcus aureus* infection..

**Table1: Dietary effect of Vitamin-E on immune response against *Staphylococcus aureus***

S.No	Parameters	Vitamin E (mg)				
		0	300	600	900	1200
1.	RBC Count ( Millions)	4.4	4.2	4.0	3.7	4.6
2	WBC counts (cells/cu mm)	5900	6900	7800	9800	9800
3	Polymorphic Neutrophil count (%)	58	62	66	65	67
4	PCV (%)	28	32	34	36	41
5	Antibody Titre(well no)	5	6	6	7	7

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