

Laboratory Analysis of Herbal Drug as Immune Booster

Raphael Nyarkotey Obu, RND, PhD^{1*}, Lawrence Aggrey –Bluwey, BSc, PGDE, MPhil²

¹Nyarkotey College of Holistic Medicine, Tema Community 7, Ghana

²Assistant Lecturer, Department of Health Administration and Education, University of Education, Winneba, Ghana

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*Corresponding author: Raphael Nyarkotey Obu, RND, PhD

Abstract

This study was design to examine the microbial and phytochemical property of MD Herbal Capsule as an immune booster. Six samples of the product were submitted to Kwame Nkrumah University of Science and Technology, KNUST, Kumasi, Ghana, as part of the Food and Drug Authority (FDA) herbal drug registration protocol. The result proved that, the herbal product as an immune booster is safe.

Keywords: Immune booster, herbal drug, safety, microbiology, phytochemical screening.

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INTRODUCTION

The Product MD Capsule Plus is an herbal capsule formulated for usage in humans as immune booster. It contains the following ingredients; Handroanthus impetiginosus, Clausena anisata, and zingiber officinale. The World Health Organization advocates the use of herbal medicines that are proven scientifically to be of good quality, safe and efficacious as affordable alternatives to orthodox medicines for the majority of the world’s populace particularly in low-income countries [1] this is an essential requirement for

the registration of newly developed medicinal products [2-4]. The study was done as requested by the Food and Drugs Authority (FDA) of Ghana as part of the registration requirements of the herbal product.

METHODOLOGY

Two tests were conducted at the Kwame Nkrumah University of Science and Technology, KNUST, are discussed here from different departments.

DEPARTMENT OF PHARMACEUTICS

Table-1: Microbial quality analysis

Test	Results	Specification (BP 2015)
Total Aerobic Microbial Count (TAMC)	1.0*10 ⁴ cfu/ml	<5.0*10 ⁵ cfu/ml
Total Yeast/Moulds Count (TYMC)	1.5*10 ³ cfu/ml	<5.0*10 ⁴ cfu/ml
Bile-tolerant Gram-negatives (Enterobacteria)	7.1*10cfu/ml	<1.0*10 ⁴ cfu/ml
Eschericha col (MaC;37 ^o c; 48h)	Not detected	Absent (in 1ml)
Salmonella (BSA; 37 ^o C;48h)	Not detected	Absent (in 25ml)

REMARKS

The total microbial load of MD Capsules was within the acceptable limits (BP 2015; category C of herbal products) there were no pathogenic

microorganisms present. The herbal mixture has complied with the BP specifications for microbiological quality.

DEPARTMENT OF HERBAL MEDICINE**Table-2: Phytochemical and physicochemical studies**

1.ORGANOLEPTIC PROPERTIES	
Form	Capsules
Colour	Transparent shells (brown powder)
Taste	Characteristic
Odour	Aromatic
2.PHYSCOCHEMICAL PROPERTIES	
pH (Aqueous decoction)	4.25
Total ash	Not more than 3.1% w/w
Water soluble extractive	Not less than 15.33% w/w
Moisture content	6.71% w/w
Average weight per capsule	0.5107 + 0.02 g (mean =SD, n=10)
3.PHYTOCHEMICAL PROPERTIES	
Reducing sugars	Positive
Saponins	Positive
Alkaloids	Negative
Flavonoids	Positive
Phytosterols	Negative
Terpenoids	Positive
Tannins	Positive
4.TLC CHROMATOGRAPHIC PROFILE	
Stationary phase	- Pre-coated silica gel plates
Mobile Phase	Chloroform: Pet-ther (9:1)
Sample used	Chloroform extract
Detecting reagent	Anisaldehyde
Results	Five (5) prominent spots were deserved after spraying and gently warming. Three (3) yellow spots (Rfs;0.90, 0.77, 0.25) Two (2) pink spots (Rfs; 0.47, 034)

4. FUORIER TRANSFORM INFRARED FINGERPRINT

A small amount of the dried aqueous extract of the powder was placed on the sample area of the Perkin Elmer UATR Fourier transform infrared (FT-IR) spectrometer and scanned between 4000-400cm⁻¹ and a cumulative scanning limitation of 24 times. Principal peak appeared at wavenumbers 3270.65(broad), 1596.22, 1031.04cm⁻¹

Characteristic physicochemical properties of MD capsules has been established for quality control purposes.

ACKNOWLEDGMENT

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