Microbial Analysis for food products and nutrient analysis for neutraceuticals	Dr.M.Thenmozhi	Biotech	2019	0.77	6 month	Nithiya Food and Neutraceuticals	Non Government
Identify the major components of bacterial cell wall Antigen for the preparation of vaccine using animal model and cell culture techniques	Dr. P. Dhasarathan	Biotech	2019	10.00	2 years	AICTE	Government
Consultancy – Enviro informatics software tools	Dr.A.J.A.Ranjitsingh	Biotech	2019	2.06	6 month	Slick alpha	Non Government
Implementation of data analytics lab	Dr. Padmapriya	CSE	2019	15.16	2 years	AICTE	Government

1. Microbial analysis for food products and nutrient analysis for nutraceuticals

(a7

NITHYA FOODS PVT LTD

15, Koola Kadai Street,
Tenkasi – 627 811
Phone No. 04633-223378
Email Id – vnktamil12@gmail.com

Dr.V.NITHYA KALYANI
Proprietor

Date : 01.02.2020

To

The Head,
Department of Biotechnology,
PRATHYUSHA ENGINEERING COLLEGE,
Chennai.

Sir,

In continuation of our telephonic order, I am happy with your previous quality testing. So further order is placed for 10 of our new products for "Microbial quality testing". As per your quote for Rs. 77,600/an advance amount of Rupees FIFTY THOUSAND is sent by a CANARA BANK, TSI Cheque/NO 589353 .Kindly acknowledge it.

Thanking you,

NITHYA FOODS PVT LTD

केनरा बैंक Canara Bank

तेनकासी - 627811
Tenkasi - 627811
2016 MCHCE

IFSC : CNRB0000961

Valid for three months only from the date of instrument

चा खा CA | 2 | 9 | 0 | 1 | 2 | 0 | 2 | 0 |
D D M M Y Y Y Y

Pay THE PRINCIPAL, PRATHYUSHA ENGINEERING COLLEGE, CHENNAI या धारक को Or Bearer

Rupees रुपये SIXTY TWO THOUSAND ONLY

अदा करें ₹ 62,000/-

खा. सं.
A/c. No. 0961101054069

"Payable at par at all our Branches in India"

N. Nithya Please sign above

[NITHYA FOODS PVT LTD]

29

⑈589353⑈ 627015013⑆

KL HI-TECH SECURE PRINT LTD - HYD / CTS - 2010

REPORT

Title of the work: Microbial quality testing

Name of the Company: Nithya Foods Pvt Ltd., Tenkasi

Types of Sample: Food sample (Fruits)

No of Samples: 10

Work carried out: Microbiology Lab, Dept. of Biotechnology, PEC.

Date: 05.03.2020

Summary of the work

The antimicrobial activity depended on the tested strain, the plant organ and the nature of the extract: for a given micro-organism, the most effective plant organ can also change according to the organic extract type (**Plates 1 - 6**). The activity of fruits against both gram positive and gram negative bacteria and fungal strains may be indicative of the presence of broad spectrum antibiotic compounds or simply general metabolic compounds or simply general metabolic toxins in the fruit.

The results reported in **Table 1** indicated that butanol extract from rambutan fruit in different concentrations (20-100 mg/mL) exhibited higher activity against all tested bacteria. Among the five solvent extracts tested, butanol extract showed maximum inhibitory potential against all tested microorganisms followed by chloroform, ethanol, hexane and aqueous extracts.

Ethanol extract of carambola exhibited maximum inhibition zone against *S.pyogenes* (13.6±0.12 mm) while the aqueous extract showed lowest inhibition zones (6.2±0.90 -7.8±0.1 mm) and there was no inhibitory activity observed against *S. pyogenes, S. sonnei, P. vulgaris, T.rubrum and E.floccosum* (**Table 2**). Butanol extract of sapota

fruit showed highest inhibition activity against *B. subtilis* (14.8±0.9 mm) in 100 mg/mL concentration and the lowest activity observed in hexane and aqueous extracts against *P.vulgaris* and *T. rubrum* (**Table 2.3**). An antimicrobial property of mangosteen fruit was depicted in **Table 2.4**. Among the 10 microbial pathogens tested, maximum suppression was observed in *S.typhimurium* (12.4±0.0 mm) and *B.subtilis* (12.2±0.1 mm) when compared with tested bacterial and fungal pathogens.

Table 1. Antimicrobial activity of Rambutan fruit extracts against human pathogenic organisms in disc diffusion assay.

Extract	Conc. mg/mL	Zone of inhibition (mm)									
		S. typhimuri-um	*S. aureus*	*S. pyogenes*	*S. sonnei*	*B. subtilis*	*P. vulgaris*	*C. albicans*	*T. rubrum*	*E. floccosum*	*M. canis*
Hexane	20	7.4±0.1	7.2±0.11	7±0.00	6.8±0.01	6.6±0.01	6.6±0.02	6.6±0.32	7±0.11	7.2±0.00	6.6±0.33
	40	7.6±0.22	8.4±0.32	7.6±0.12	7.2±0.02	7.6±0.21	6.8±0.01	7.6± 0.33	7.6±0.21	8.4±0.32	7±0.12
	60	8± 0.5	9.4±0.42	8.4±0.32	9±0.00	9.2±0.22	7.2±0.11	9±0.11	9±0.009	9.2±0.22	8.6±0.09
	80	8.6±0.81	10±0.05	9.6±0.33	9.6±0.31	9.4±0.34	7.4±0.12	9.4±0.09	8.8±0.01	9.2±0.19	9.4±0.07
	100	10.8±0.01	10.4±0.10	10.6±0.1	11.4±0.1	11.2±0.9	7.2±0.91	10.2±0.1	9.4±0.41	10.4±0.17	10.4±0.19
Butanol	20	7.4±0.11	6.4±0.50	7.4±0.09	7.6±0.34	7.6±0.01	7.2±0.1	7±0.00	7.4±0.21	8±0.00	7.2±0.16
	40	8±0.71	9.4±0.61	9.2±0.02	9.4±1.0	9±0.001	10±0.00	8.6±0.60	9.2±0.91	8.4±0.21	9.2±0.07
	60	8.4±0.30	9.2±0.41	10±0.06	10.4±1.0	10±0.12	10.6±0.02	10±0.61	11±0.72	9.6±0.05	8.8±0.31
	80	12.2±0.21	12.4±0.19	10.4±0.21	11±0.22	11.2±0.0	12±0.12	10.8±0.0	11±0.71	10.6±0.09	12.2±0.32
	100	14±0.00	14.2±0.71	14.2±0.22	13±0.23	14±0.0	14±0.14	13±0.22	12.6±0.32	12.2±0.1	14.2±0.21
Ethanol	20	7.6±0.12	7.6±0.65	7.2±0.09	7.6±0.41	7.6±0.09	8±0.00	7±0.009	7.2±0.041	7.2±0.12	7.4±0.21
	40	8.4±0.76	8.2±0.13	7.8±0.09	8.4±0.42	8.4±0.12	8.4±0.22	8±0.007	7.8±0.42	7.8±0.22	8.4±0.00
	60	9.0±0.27	11±0.21	8.6±0.06	9.4±0.70	9±0.00	10±0.06	8.8±0.32	8±0.004	8.4±0.41	8.2±0.00
	80	10.4±0.22	12±0.22	9.8±0.08	11.2±0.2	11.4±0.2	11±0.12	9.4±0.31	9.2±0.67	9.4±0.32	10.2±0.10
	100	12±0.26	13±0.00	10.2±0.1	12.4±0.3	12.8±0.0	12±0.21	10.2±0.0	10.6±0.0	10±0.32	10.8±1.00

Chloroform	20	7.6±0.12	7.2±0.41	8.2±0.32	8.2±0.07	8±0.009	7.2±0.00	7.2±0.12	8±0.006	8±0.41	7.6±0.42
	40	10±0.01	9.2±0.21	9± 0.009	9.2±0.09	9.4±0.03	8.8±0.42	7.4±0.72	8.4±0.01	9±0.21	8±0.32
	60	10±0.09	9.2±0.19	10.4±0.21	10.2±0.2	10±0.0	10.2±0.12	8.6±0.66	9± 0.007	8.4±0.09	8±0.35
	80	10.4±0.13	10.2±0.18	11.4±0.20	12±0.32	10.6±0.0	10.8±0.12	11±0.12	10.8±0.0	10.6±0.09	9.2±0.21
	100	12.2±0.33	12±0.15	13.4±0.0	14.2±0.0	12±0.21	12±0.12	12.2±0.9	11.6±0.0	11.4±0.21	9.2±0.22
Aqueous	20	6.6±0.45	6.8±0.51	6.4±0.21	6.8±0.67	6.6±0.32	6.2±0.42	6.6±0.19	6.4±0.21	6.8±0.22	6.8±0.32
	40	7.0±0.42	7.2±0.29	6.6±0.09	6.6±0.21	7±0.002	6.4±0.41	6.8±0.33	6.4±0.37	6.8±0.32	7.2±0.21
	60	7.2±0.91	7.2±0.22	7±0.001	7±0.009	7.4±0.21	6.8±0.12	7.2±0.54	6.8±0.22	7.2±0.00	8±0.21
	80	8±0.07	7.6±0.01	7.4±0.12	7.2±0.21	8.2±0.21	7.2±0.11	7.6±0.36	7.2±0.31	7.4±0.50	7.2±0.23
	100	8.2±0.09	8.2±0.9	8.4±0.21	7.6±0.12	8.4±0.9	7.4±0.21	8.2±0.31	7.6±0.12	7.2±0.71	7.8 ±0.12

All values are expressed as mean ± SD

Table 2. Antimicrobial activity of Durian fruit extracts against human pathogenic organisms in disc diffusion assay.

Extract	Conc mg/mL	Zone of inhibition (mm)									
		S. typhimuri-um	*S. aureus*	*S. pyogenes*	*S. sonnei*	*B. subtilis*	*P. vulgaris*	*C. albicans*	*T. rubrum*	*E. floccosum*	*M. canis*
Hexane	20	7.8±0.00	7.4±0.22	7.8±0.00	7.4±0.44	7.6±0.00	7.6±0.03	7.6±0.04	7.8±0.03	7. 8±1.0	7±1.1
	40	7.8±0.01	8.8±0.12	8.8±0.04	7.8±0.32	8.8±0.01	7.4±0.01	7.8±0.00	8.6±0.04	8.8±1.11	7.8±0.2
	60	9.4±0.41	9.8±0.00	9.2±0.33	9.6±0.09	9.6±0.09	7.4±0.00	9.8±0.11	9.4±0.05	9.8±0.11	8.8±0.00
	80	9.4±0.3	11±0.07	9.8±0.12	9.8±0.12	9.8±0.07	7.8±0.04	9.8±0.03	9.8±0.01	9.8±0.34	10.8±0.01
	100	11.4±0.40	11±0.02	11.4±0.13	12.8±0.4	11.8±0.9	8.8±0.12	11±0.12	10.8±0.05	11.4±0.32	11±0.00
Butanol	20	7.8±0.71	7.4±0.17	7.6±0.45	7.8±0.43	7.8±0.32	7.8±0.13	7.6±0.43	7.8±0.04	8.8±0.25	7.8±0.84
	40	9.2±0.09	9.8±0.42	9.8±0.42	9.8±0.42	9.6±0.21	9.8±0.44	11.2±0.3	9.2±0.31	9.4±0.26	7.8±0.62
	60	9.4±0.08	11.8±0.02	11.6±0.43	11.4±0.1	11±0.12	11.4±0.41	11.4±0.1	11.8±0.00	9.4±0.41	9.6±0.06
	80	12.4±0.05	13.2±0.00	11.4±0.21	11.6±0.9	11.8±0.3	12.6±0.09	11.6±0.4	11.8±0.5	11.8±0.32	12.8±0.09
	100	13.2±0.05	15.2±0.12	15±0.00	15±0.07	13.8±0.1	15.6±0.06	15.4±0.7	13.6±0.12	13.4±0.45	14.2±0.12
Ethanol	20	7.8±0.00	7.8±0.09	7.4±0.31	7.8±0.00	7.8±0.14	8.6±0.03	7.6±0.09	7.4±0.42	7.4±0.32	7.8±0.16
	40	9.2±0.01	9.4±0.41	7.8±0.23	9.2±0.12	9.4±0.15	9.2±0.01	8.8±0.61	7.8±0.32	7.8±0.09	9.2±0.71
	60	9.8±0.01	11.6±0.54	9.4±0.00	9.8±±0.3	9.8±0.15	10.6±0.00	9.4±0.12	9±0.009	9.4±0.08	9.2±0.75
	80	11.2±0.03	12.8±0.52	9.8±0.06	11.8±0.3	11.8±0.1	11.6±0.05	10.6±0.3	9.8±0.42	10.8±0.10	10.8±0.45
	100	13.2±0.03	13.6±0.44	11.4±0.02	13.4±0.2	13.6±0.1	13±0.04	11.2±0.3	11.6±0.12	10.8±0.00	11.6±0.32

Chloroform	20	7.8±0.11	7.8±0.03	8.8±0.01	9.2±0.00	6.8±0.00	7.8±0.009	7.8±0.53	8.8±0.34	9±0.007	7.8±0.001
	40	11.2±0.21	9.8±0.00	9.8±0.13	9.8±0.14	9.8±0.01	9.4±0.12	7.8±0.12	9±0.007	9.4±0.001	8.8±0.09
	60	11.4±0.22	9.8±0.32	11.2±0.00	11.2±0.0	11±0.02	10.8±0.12	9.4±0.34	9.8±0.05	9.4±0.03	8.8±0.06
	80	11.6±0.23	11.6±0.97	11.8±0.02	12.8±0.0	11.4±0.0	11.4±0.00	11.2±0.0	11.4±0.12	11±0.41	9.8±0.72
	100	13±0.21	12.8±1.00	13.8±0.06	14.6±0.1	13.2±0.9	13.4±0.15	13.6±0.3	11.8±0.34	11.8±0.31	9.8±0.34
Aqueous	20	7.2±0.12	7±0.00	7.2±0.05	7±0.02	7.4±0.00	7±0.007	6.8±0.45	6.6±0.32	7±0.95	7.4±0.01
	40	7.8±0.12	7.6±0.03	7.4±0.03	7.2±0.04	7.6±0.02	7.2±0.12	7.6±0.12	7.4±0.12	7.8±0.63	7.8±0.00
	60	7.8±0.31	7.8±0.02	7.6±0.00	7.6±0.01	8.8±0.32	7.8±0.13	7.8±0.43	7.8±0.14	8.6±0.91	9.2±0.9
	80	8±0.00	7.8±0.00	7.8±0.33	8.2±0.09	9.2±0.32	8.6±0.09	9±0.006	8.8±0.87	8.8±0.34	9.4±0.6
	100	8.4±0.51	8.2±0.43	8.8±0.42	8.8±0.09	9.4±0.12	9±0.12	9.6±0.09	9.4±0.37	9.6±0.32	9.8±0.02

All values are expressed as mean ± SD

Table 3. Antimicrobial activity of Carambola fruit extracts against human pathogenic organisms in disc diffusion assay.

Extract	Conc. mg/mL	Zone of inhibition (mm)									
		S. typhimuri-um	*S. aureus*	*S. pyogenes*	*S. sonnei*	*B. subtilis*	*P. vulgaris*	*C. albicans*	*T. rubrum*	*E. floccosum*	*M. canis*
Hexane	20	7.2±0.09	6.6±1.00	7±0.01	6.4±0.12	6.2±0.01	6.2±0.12	6.2±0.00	6.8±0.02	7±0.09	6.8±0.13
	40	7.4±0.20	8.4±0.09	7.6±0.02	7±0.13	7.2±0.01	6.2±0.09	7.6±0.12	7.4±0.12	7.8±0.00	7.2±0.11
	60	8±0.12	9.4±0.111	8.2±0.03	9±0.09	9±0.02	6.4±0.08	8.4±0.34	8±0.45	8.4±1.00	8.2±0.31
	80	8.4±0.08	9.8±0.45	9.2±0.04	9.2±0.09	9.2±0.03	6.2±0.45	9±0.93	8.6±0.94	9±0.09	8.8±0.32
	100	10.8±0.02	10.4±0.12	10.8±0.57	11.6±0.3	11.4±0.1	6.4±0.54	10.2±0.1	9.6±0.92	10.6±0.32	10.2±0.12
Butanol	20	7.2±0.20	7±0.53	7.4±0.43	7±0.00	7.6±0.43	7.6±0.23	7.6±0.01	7±0.96	6.6±0.08	9.6±0.41
	40	7.6±0.12	7.6±0.34	7.8±0.02	7.8±0.03	8.4±0.3	8.8±0.56	8.4±0.34	7.8±0.12	7.4±0.02	7.8±0.63
	60	9.6±0.08	8.4±0.12	9.6±0.00	9.6±0.09	9±0.12	9.6±0.12	9±0.002	8.6±0.09	7.8±0.09	8.2±0.09
	80	11±0.34	9.8±0.09	10.6±0.00	10.6±0.2	11.2±0.2	11±0.78	10.2±0.3	9.6±0.34	9.4±±0.00	9±0.08
	100	13.2±0.45	10.2±0.82	12.2±0.78	11±0.34	13.2±0.3	9.6±0.97	11±0.56	10.4±0.12	11±1.00	10.2±0.00
Ethanol	20	7.6±0.09	7.2±0.65	6.6±0.07	6.2±0.09	6.4±0.03	7.6±0.56	7.4±0.67	7±0.34	6.2±0.32	6.4±1.00
	40	8.2±0.00	7.6±0.76	8.6±0.05	9.6±0.32	9.2±0.42	8.4±0.76	9±0.00	10±0.00	6.6±0.09	6.8±0.09
	60	8.6±0.12	8.4±0.09	11±0.74	11±0.00	9.6±0.34	10.2±0.45	10.2±0.3	10.4±0.12	8.6±0.04	8.4±0.07
	80	11±0.54	11.8±0.32	11.2±0.90	11.4±0.3	11.6±0.1	11.2±0.62	10.6±0.4	10.4±0.34	10.2±0.00	10±0.32
	100	12.4±0.56	13.2±±0.1	13.6±0.12	11.8±0.9	11.8±0.3	11.6±0.56	12.2±0.4	11.6±0.45	11±0.11	10.4±0.31

Chloroform	20	7.8±0.12	7.8±0.12	8.4±0.54	8.±40.45	8.2±0.06	7.4±0.04	7.14±0.3	8.2±0.54	8.2±0.11	7.8±0.20
	40	10.2±0.34	9.6±0.90	9.4±0.32	9.6±0.32	9.8±0.03	9±0.09	7.8±0.34	8.8±0.09	9.2±0.01	8.2±0.00
	60	10.2±0.32	9.6±0.34	10.8±0.32	10.8±0.3	10.4±0.4	10.4±0.42	9±0.90	9.4±0.53	8.8±0.03	8.4±0.12
	80	10.8±0.54	10.6±0.34	11.8±0.43	12.4±0.2	11.2±0.7	11.2±0.09	10.8±0.3	11±0.52	10.4±0.20	9.4±0.84
	100	12.6±0.90	12.4±0.98	13.8±0.42	14±0.12	12.4±0.3	12±0.07	12±0.10	11.8±0.34	11.8±0.20	7.2±0.34
Aqueous	20	6.8±0.9	6.8±±0.43	6.4±0.21	6.4±0.00	6.6±0.54	6.2±0.002	6.4±0.00	6.±20.39	6.8±0.03	7.4±0.32
	40	7±0.001	7.2±0.04	6.6±0.21	6.6±0.21	7.2±0.02	6.4±0.45	6.8±0.12	6.4±0.01	7±0.12	8±0.12
	60	7.6±0.12	7.4±0.04	7±0.005	7±0.005	7.8±0.03	6.8±0.09	7.2±0.34	6.8±0.02	7.4±0.08	7.8±0.15
	80	8±0.34	7.8±0.2	7.8±0.20	7.4±0.12	8.4±0.32	7.2±0.00	7.8±0.23	7.2±0.45	7.6±0.45	7.8±0.09
	100	7.4±0.12	8.2±0.2	8.8±0.30	7.6±0.34	8.8±0.05	7.4±0.10	8.6±0.23	7.60±0.00	7.6±0.32	7.8±0.09

All values are expressed as mean ± SD

Table 4. Antimicrobial activity of Sapota fruit extracts against human pathogenic organisms in disc diffusion assay.

Extract	Conc. mg/mL	Zone of inhibition (mm)									
		S. typhimuri-um	*S. aureus*	*S. pyogenes*	*S. sonnei*	*B. subtilis*	*P. vulgaris*	*C. albicans*	*T. rubrum*	*E. floccosum*	*M. canis*
Hexane	20	7.6±0.71	7±0.09	7.2±0.02	6.6±0.11	6.8±0.12	6.2±0.12	6.8±0.43	7.2±0.12	7.4±0.12	6.4±0.00
	40	7.8±0.62	8.6±0.20	7.8±0.05	7.4±0.12	7.6±0.09	6.6±0.32	7.8±0.42	7.8±0.009	8.2±0.01	7.4±0.01
	60	8.2±0.00	9.8±0.33	8.8±0.23	9.2±0.00	9.4±0.34	6.8±0.34	9.4±0.12	9.2±0.12	9.4±0.03	8.4±0.05
	80	8.8±0.03	10.2±0.42	9.8±0.009	9.8±0.02	9.6±0.09	7±0.11	9.1±0.13	9±0.78	9.4±0.04	9.6±0.20
	100	11±0.11	10.6±0.45	11±0.12	11.8±0.3	11.4±0.4	7.4±0.13	10.6±0.5	9.8±0.09	9±0.12	10.8±0.09
Butanol	20	7.8±0.12	6.8±0.12	7.6±0.00	7.8±0.43	7.8±0.32	7.4±0.90	7.2±0.87	7.8±0.01	8.2±0.09	7.6±0.90
	40	8.2±0.009	9.8±0.90	9.6±0.01	9.8±0.76	9.2±0.23	10.2±0.09	9±0.08	9.6±0.21	8.8±0.34	9.6±0.45
	60	8.8±0.76	11.6±0.54	10.2±0.02	10.8±0.4	8.4±0.21	11±0.08	10.4±0.9	11±0.32	9.2±0.45	9±0.45
	80	12±0.12	12.8±0.09	11±0.10	11.4±0.3	11.8±0.3	12.2±0.01	11.2±0.1	11.4±0.32	11.4±0.34	12.4±0.09
	100	14.2±0.13	14.4±0.87	14.4±0.50	13.8±0.1	14.8±0.9	14.2±0.10	13.4±0.1	13±0.02	12.6±0.32	14±1.0
Ethanol	20	7.8±0.09	7.8±0.90	7±0.007	7.8±0.12	7.8±0.09	8.2±0.10	7.2±0.00	7±0.004	7±0.13	7.8±0.20
	40	8.8±0.0	8.4±0.007	7.8±0.54	9±0.007	8.8±0.09	9±0.001	8.2±0.01	7.8±0.03	7.8±0.04	8.8±0.34
	60	9.4±0.09	11.2±0.43	8.8±0.54	9.8±0.02	9.4±0.43	10.2±0.32	9±0.009	8.2±0.01	8.8±0.12	8.6±0.00
	80	10.8±0.00	12.4±0.34	9.8±0.34	11.6±0.3	11.8±0.4	11.4±0.31	9.8±0.12	9.8±0.10	9.8±0.33	10.2±0.01
	100	12.4±0.40	13.6±0.09	10.8±0.45	11.30±24	13.6±0.5	12.2±0.03	10.8±0.3	11.6±0.00	10.2±0.44	9±0.09

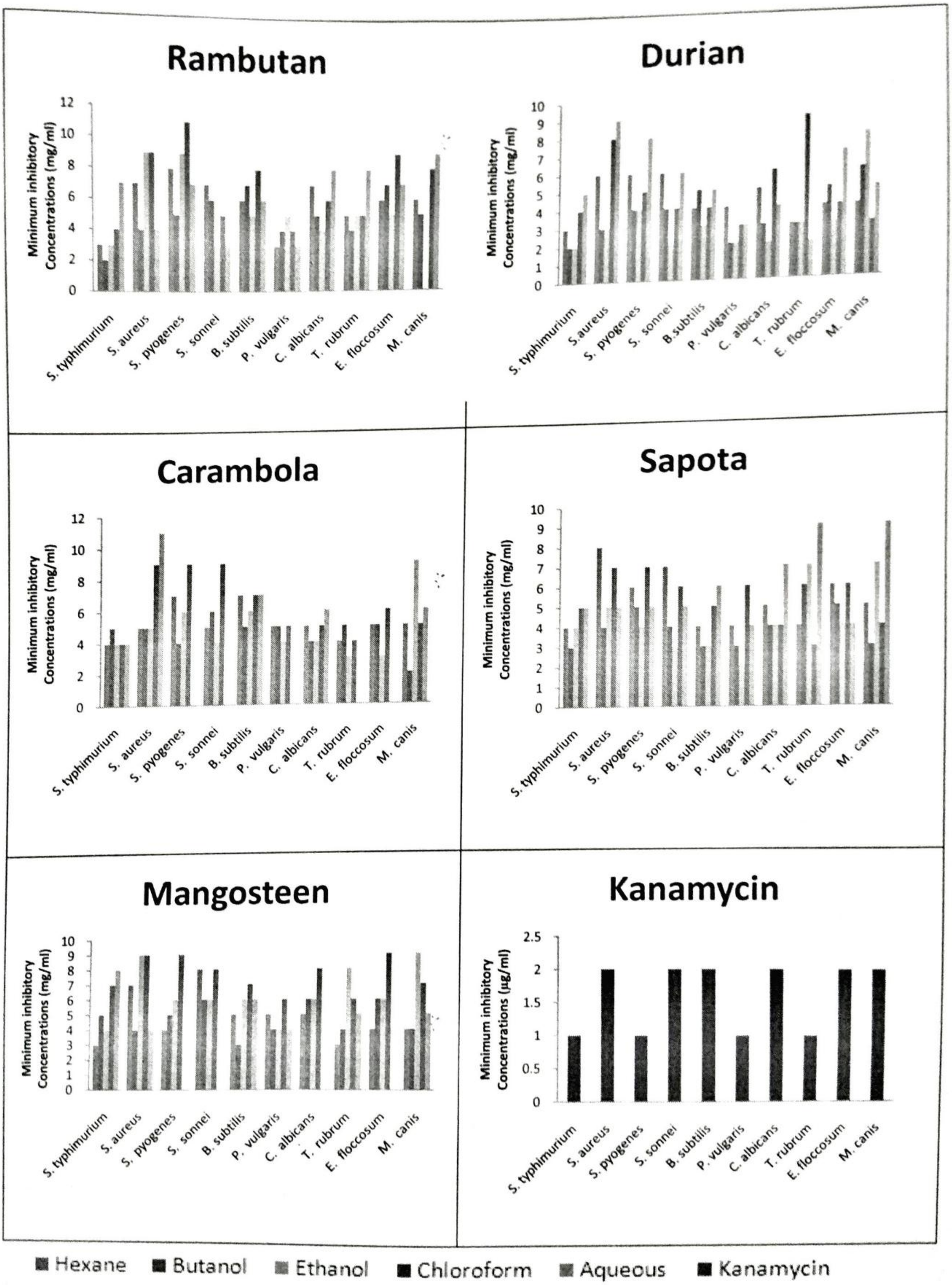
Chloroform	20	7.2±0.12	7±0.12	7±0.007	6.6±0.12	7.2±0.07	7.2±0.91	7±0.52	6.2±0.12	6.4±0.33	6.2±0.77
	40	8.6±0.9	8.2±0.41	8.4±0.38	6.8±0.32	8.2±0.21	8.4±0.00	8.2±0.42	9±0.9	6.4±0.03	6.6±0.00
	60	8.8±0.8	8.4±0.3	8.8±0.30	8.2±0.13	8.4±0.22	8.8±0.03	8.4±±0.4	8.8±0.32	6.6±0.21	8±0.03
	80	10.2±0.0	10.2±0.0	11±0.10	9.2±0.17	9.4±0.42	10±0.04	9.6±0.31	10±0.00	6.4±0.22	20±0.07
	100	11±0.12	10.6±0.12	12±0.20	10.4±0.1	10.4±0.4	10.8±0.00	10.6±0.2	10.4±0.05	6.4±0.32	20.4±0.05
Aqueous	20	6.4±0.12	6.2±0.54	-	-	6.2±0.51	6.4±0.04	-	6.4±0.01	-	6.4±0.03
	40	6.6±0.21	6.6±0.42	-	-	6.6±0.09	7±0.33	-	6,6±0.01	-	6.6±0.31
	60	6.8±0.21	6.8±0.32	-	-	6.8±0.02	7.2±0.21	-	7.2±0.21	-	6.8±0.21
	80	7.2±0.31	7.2±0.31	-	-	7.4±0.008	7.8±0.09	-	7.8±0.21	-	7±0.21
	100	7±0.91	7.4±0.12	-	-	7.6±0.00	8±0.01	-	8.8±0.00	-	7±0.22

All values are expressed as mean ± SD

Table 6. Antimicrobial activity of Kanamycin against human pathogenic organisms.

S. No	*Conc.* µg/mL	*S. typhimuri-um*	*S. aureus*	*S. pyogenes*	*S. sonnei*	*B. subtilis*	*P. vulgaris*	*C. albicans*	*T. rubrum*	*E. floccosum*	*M. canis*
1	20	13.2±0.2	13.2±0.9	13±0.04	13.4±0.07	13±0.8	13.6±0.90	8.4±0.11	9±0.9	9.6±0.45	9.2±0.3
2	40	13.6±0.12	13.2±0.13	12.8±0.43	12.2±0.22	13.2±0.67	12.2±0.45	11.2±0.32	11.4±0.9	11.2±0.0	11.6±0.32

Figure 1. Minimum Inhibitory Concentration of various extracts of fruits against human microbial pathogens.



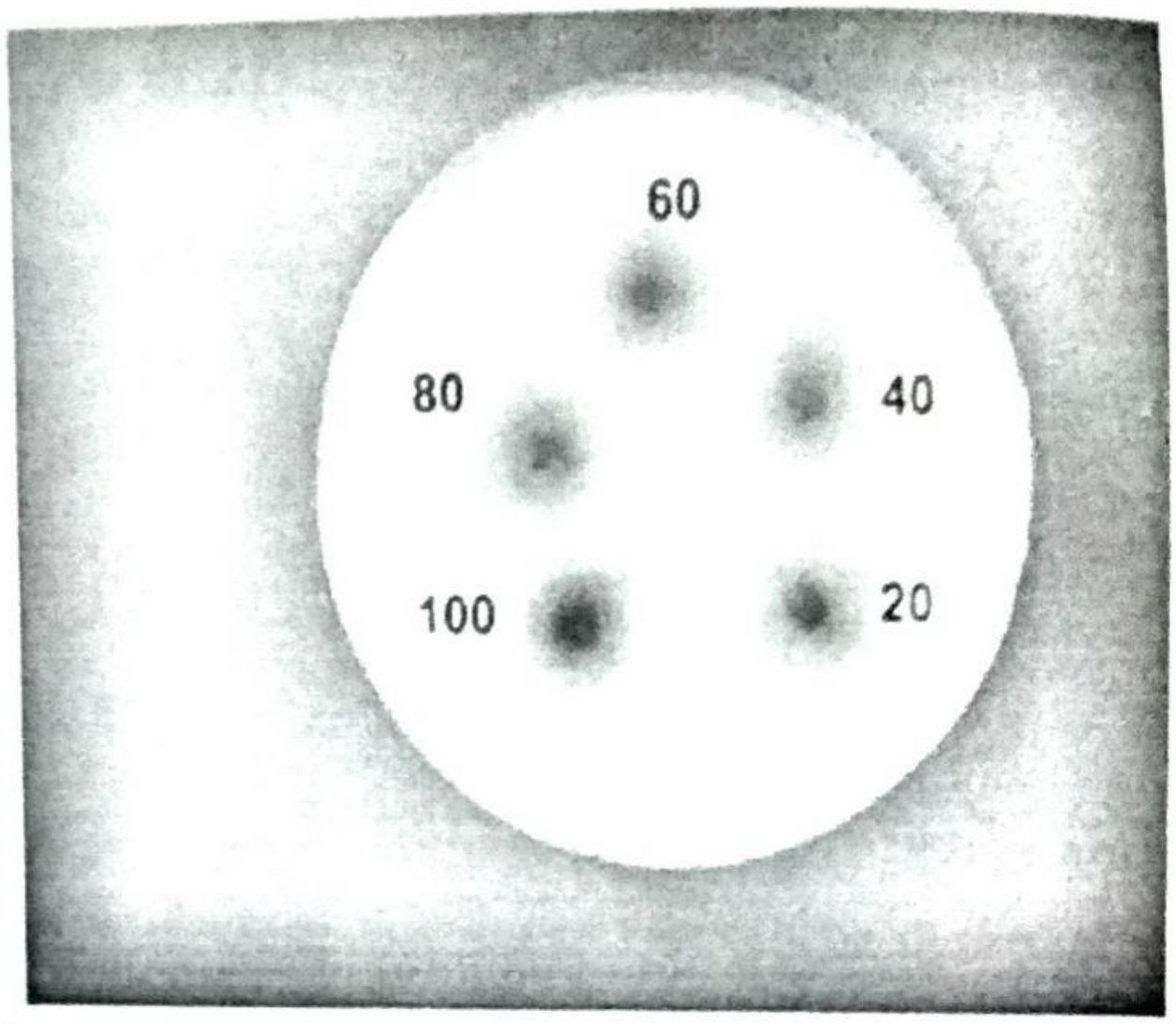
Chloroform	20	7.8±0.54	7.6±0.43	7.8±0.23	6.8±0.32	7.6±0.09	7.6±0.00	7.2±0.32	6.4±0.45	6.4±0.12	6.8±0.21
	40	9.4±0.90	8.4±0.90	9.2±0.09	7.2±0.09	8.6±1.00	8.8±0.12	8.4±0.45	9.4±0.67	6.6±0.45	7.2±0.34
	60	9.8±1.0	8.8±0.45	9.6±0.90	8.4±0.09	9±0.32	9.6±0.45	9±0.12	9.6±0.32	6.4±0.45	6.8±0.04
	80	10.6±0.34	10.4±0.18	11.8±1.00	9.6±0.32	9.8±0.11	10.2±0.34	9.8±0.00	10.2±0.34	6.4±0.32	6.8±0.78
	100	11.8±0.03	11.2±0.34	12.4±0.00	11±0.10	11±0.04	11.6±0.56	11.4±0.9	11.2±0.45	6.2±0.42	6.8±0.43
Aqueous	20	6.4±0.04	6.2±0.90	-	-	6.2±0.01	-	6.4±0.34	-	-	6.8±0.32
	40	6.6±0.09	6.6±0.34	-	-	6.6±0.32	-	6.6±0.56	-	-	6.6±0.04
	60	7±0.12	7±0.23	-	-	7±0.12	-	7±1.0	-	-	7±0.12
	80	7.2±0.45	7.2±0.23	-	-	7.4±0.11	-	7.2±1.11	-	-	8.2±0.32
	100	7.2±0.98	7.8±0.1	-	-	7.8±0.22	-	7.4±0.09	-	-	7.2±0.45

All values are expressed as mean ± SD

Table 5. Antimicrobial activity of mangosteen fruit extracts against human pathogenic organisms in disc diffusion assay.

Extract	Conc. mg/mL	Zone of inhibition (mm)									
		S. typhimuri-um	*S. aureus*	*S. pyogenes*	*S. sonnei*	*B. subtilis*	*P. vulgaris*	*C. albicans*	*T. rubrum*	*E. floccosum*	*M. canis*
Hexane	20	7±0.00	6.6±0.0	6.8±0.01	6.2±0.2	0±0.37	6.2±0.00	0±0.01	6.8±0.14	6.8±0.00	6.6±0.22
	40	7±0.21	8.2±0.01	7.2±0.04	6.8±0.4	7±0.09	6.2±0.02	7.4±0.04	7.2±0.44	7.4±0.11	7±0.21
	60	7.2±0.09	9±0.00	8±0.001	8.4±0.31	8.4±0.34	6.2±0.09	8.2±0.02	7.6±0.12	8±0.21	8±0.21
	80	8.2±0.12	9.4±0.21	8.8±0.21	8.6±0.00	8.8±0.14	6.2±0.92	8.6±0.33	8.2±0.00	8.4±0.12	8.4±0.00
	100	10.4±0.0	10.2±0.3	10.4±0.0	11.2±0.1	11.2±0.1	6.2±0.22	10±0.43	9.2±0.87	10.2±0.12	10±0.03
Butanol	20	7±0.32	6.8±0.21	7.2±0.71	6.8±0.81	7.2±0.00	7±0.34	7.4±0.23	6.8±0.02	6.2±0.00	9.2±0.09
	40	7.4±0.34	7.2±0.22	7.2±0.01	7.2±0.23	8.2±0.21	8.4±0.00	8.2±0.21	7.2±0.05	7.2±0.09	7.4±0.04
	60	7.2±0.12	8.2±0.21	9.2±0.31	9±0.00	8.4±0.21	9.2±0.04	8.8±0.31	8.2±0.00	7.4±0.09	8±0.05
	80	10.6±00	9.2±0.32	10.2±0.0	10.2±0.1	10.8±0.9	10.4±0.05	10±0.22	9.2±0.12	8.8±0.21	8.6±0.00
	100	12.4±0.0	10±0.31	12±0.2	10.4±0.1	12.2±0.1	10.8±0.91	10.4±0.4	10.2±0.0	10.8±0.00	10±0.32
Ethanol	20	7±0.009	6.6±0.09	6.6±0.21	6.2±0.22	6.4±0.02	7.2±0.92	7±0.91	6.8±0.11	6.2±0.06	6.6±0.22
	40	7.4±0.09	7.2±0.1	8±0.009	7.2±0.09	8±0.37	8±0.66	8.2±0.09	8.8±0.42	6.6±0.01	6.8±0.12
	60	8.2±0.01	8±0.12	9.2±0.12	9±0.09	9±0.00	9.6±0.43	9.4±0.02	9.2±0.01	8±0.00	6.6±0.15
	80	10±0.02	10±0.12	10±0.41	10±0.00	10±0.09	10.2±0.00	10.2±0.1	10.2±0.09	10.2± 0.2	6.6±0.17
	100	10.4±0.0	11.2±0.0	11±0.41	10.6±0.1	11±0.06	10.8±0.31	11.2±0.4	10.6±0.00	10.6±0.00	6.6±0.21

Plate 2.4.
Aqueous extract of sapota fruit against Shigella sonnei



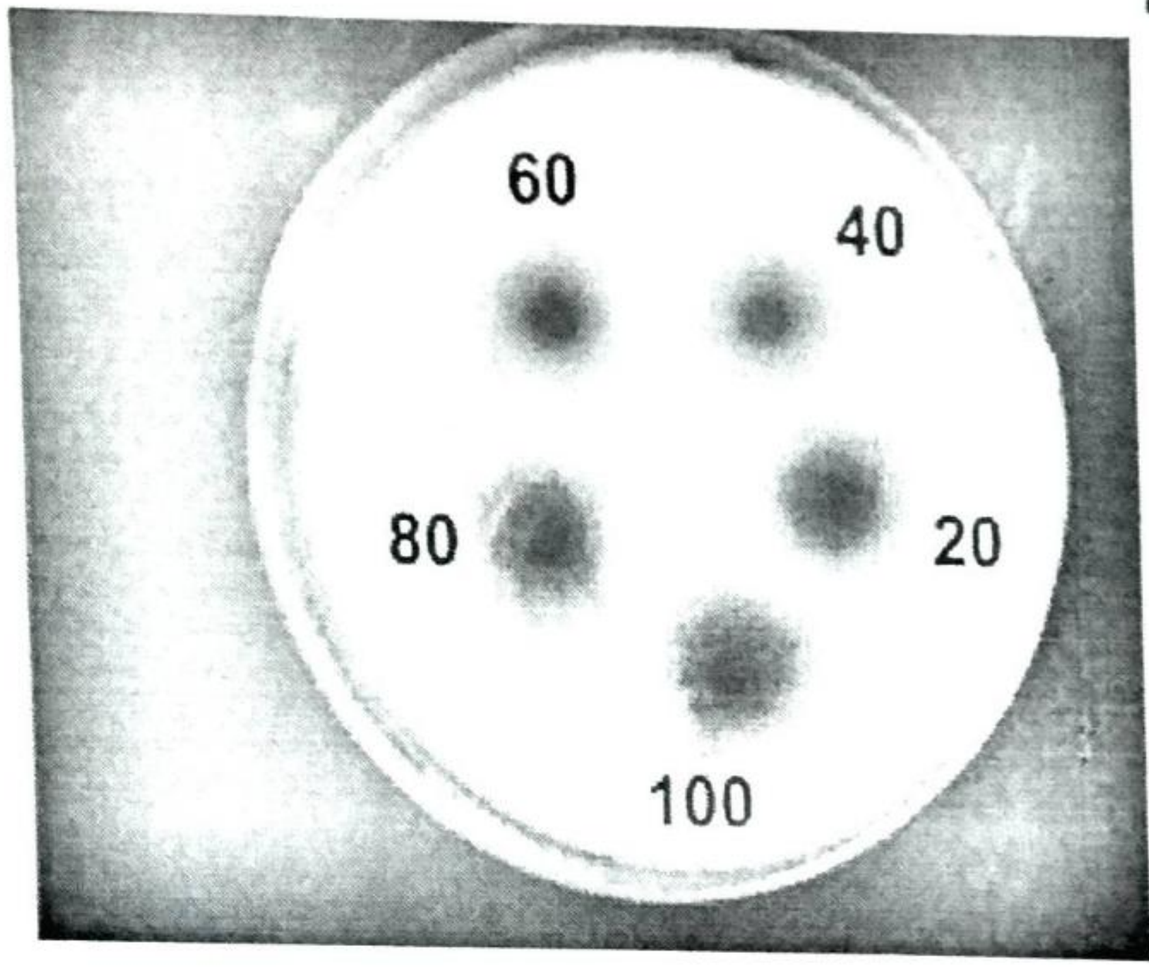
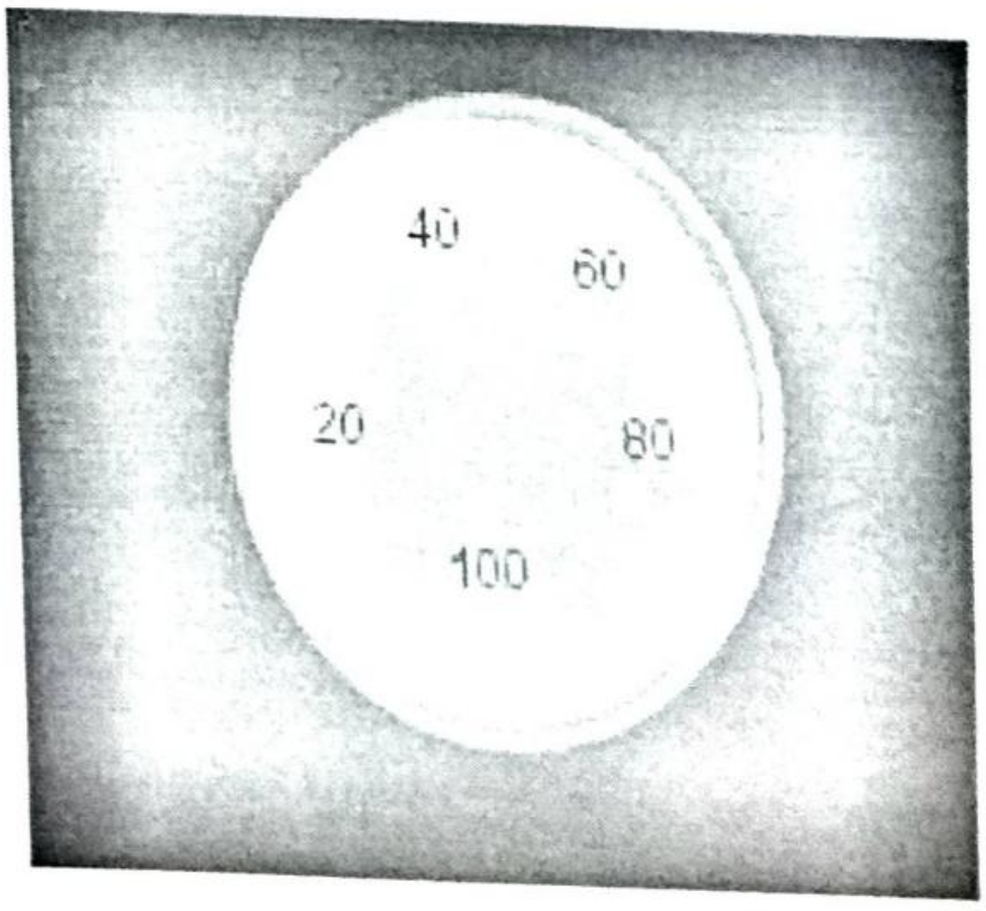


Plate 2.5.

Ethanol extract of Sapota fruit against *Salmonella typhimurium*

Plate 2.6.

Water extract of Mangosteen fruit against *Streptococcus pyogenes*



Plates 1-6. Antimicrobial activity of different extracts of fruits against microbial organisms in disc diffusion assay.

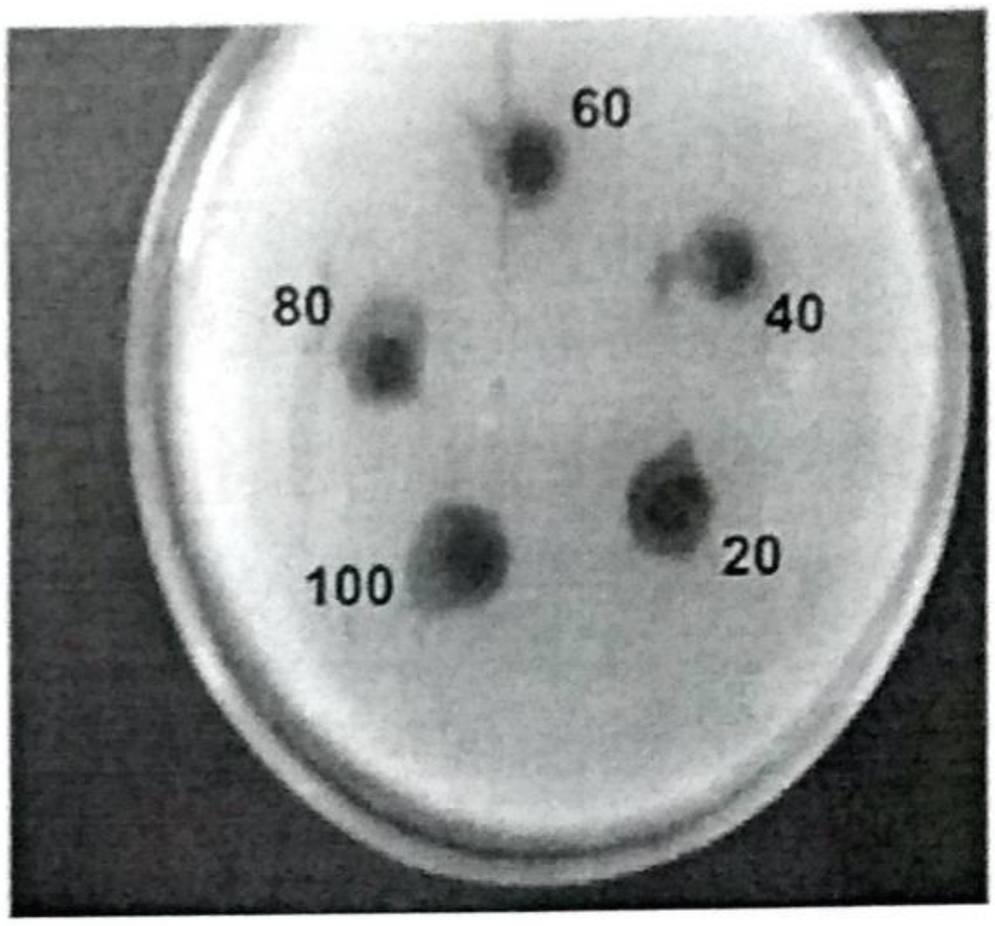


Plate 2.1.

Butanol extract of durian fruit against *Proteus vulgaris*

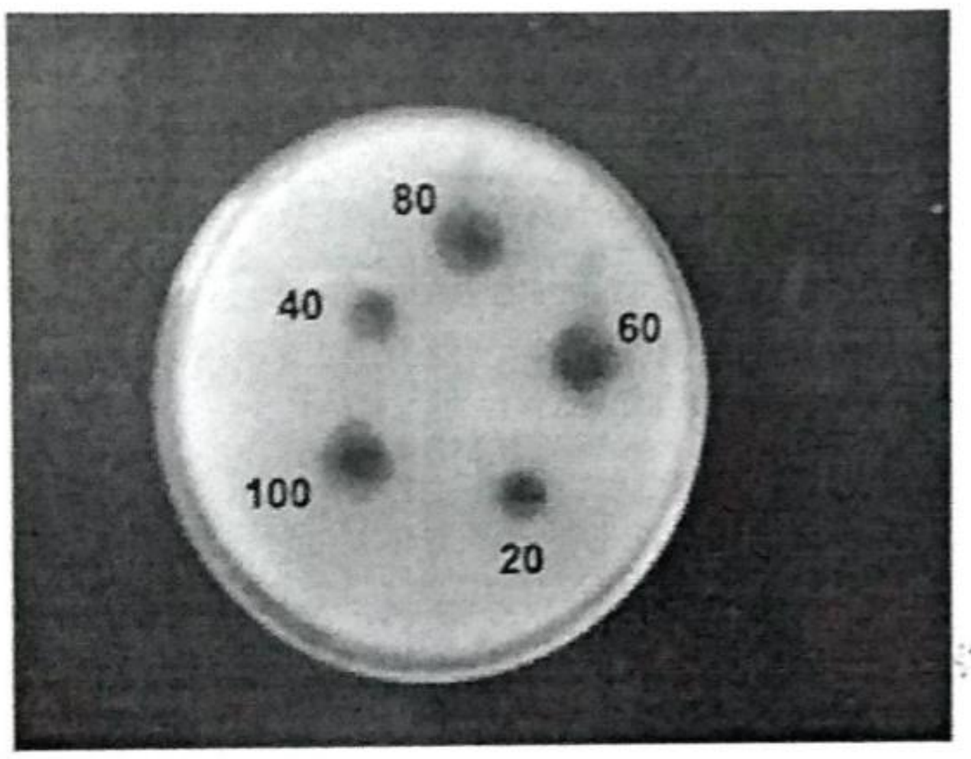


Plate 2.2.

Ethanol extract of durian fruit against *Bacillus subtilis*

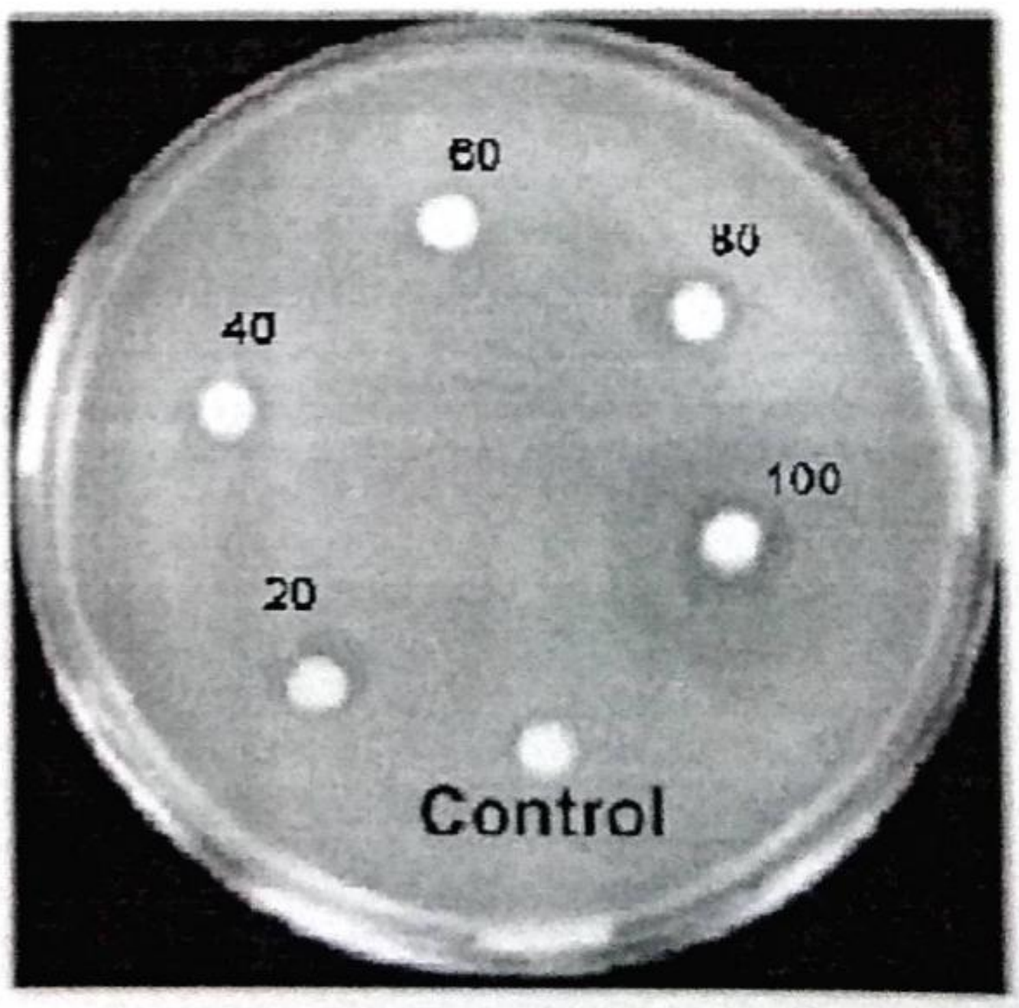


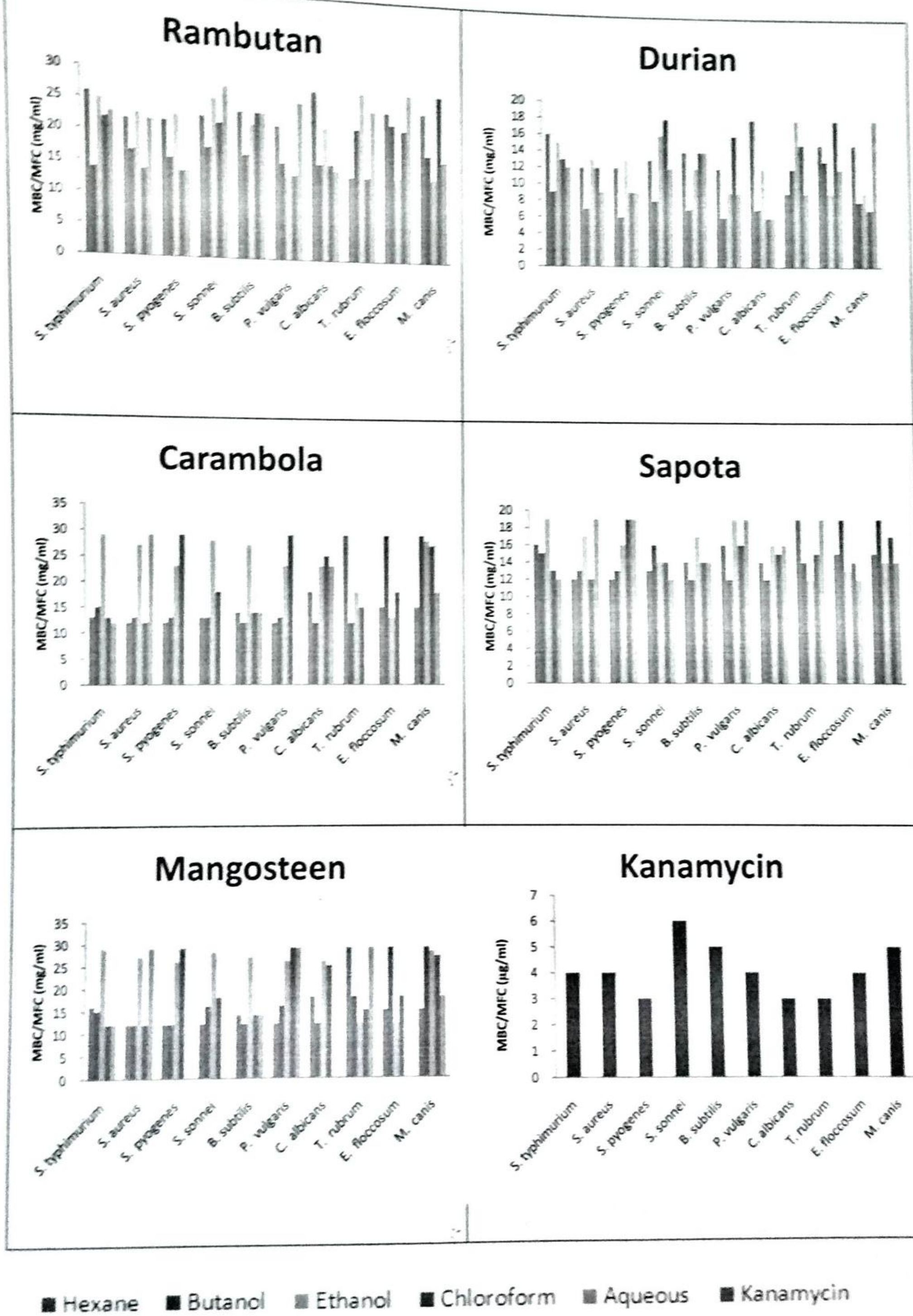
Plate 2.3.

Hexane extract of carambola fruit against *Shigella sonnei*

To compare the sensitivity of the bacterial and fungal strains against fruits extracts that exhibited good antimicrobial activity in disc diffusion assay were submitted to the Minimum Inhibition Concentration (MIC) test. MIC, MBC and MFC values were evaluated for those extracts, which were showing activity in diffusion assay. Excellent antibacterial and antifungal activities were observed and shown by low MIC, MBC and MFC values. The gram negative and the gram positive bacteria were susceptible to all the extracts with Minimum Inhibitory Concentration (MIC) ranging from 2-11 mg/mL (**Figure 1-2**) and MBC ranging from 6-29 mg/mL. The activity against the fungi *E.floccosum*, *C. albicans*, *T. rubrum* and *M.canis* was susceptible to all the extracts with MIC ranging from 2-10 mg/mL and Minimum fungicidal concentration (MFC) ranging from 7-29 mg/mL (**Figure 1-2**). This experiment confirmed the strong antimicrobial activity of extracted fruits on gram- positive, gram-negative bacteria and fungal pathogens. These results verify the earlier study that bacterial pathogens were more sensitive to the crude extracts than fungal pathogens (Adeola *et al*., 2010).

Highest MBC/MFC values (29 mg/mL) were observed in aqueous and chloroform extract of carambola fruit against *S.aureus* and *P.vulgaris*. Similar results (29 mg/mL) were also observed in aqueous and butanol extract of mangosteen fruit against *S. typhimurium* and *E. floccosum* pathogens, which indicated the lowest bactericidal and fungicidal activity, against these organisms.

Figure 2. Minimum Bactericidal and fungicidal concentration of various extracts of fruits against pathogens.



This study also demonstrated that natural medicine can be as effective as modern medicine to combat pathogenic microorganisms. This work has highlighted the antimicrobial effects of different extracts of five fruits and some of the medicinally important pathogens. These investigations open a new window and suggest the potentialities of these extracts as antimicrobial agent. Hence fruits could be used as a guide in our continuing search for new natural products with potential medicinal properties as it will lead to the development of a phytomedicine to act against microbes.

STATEMENT OF EXPENDITURE

S. No.	Particulars	Quantity	Expenditure in rupees
1	Chemicals	1000 gms	4000
2	Analysing kit	10 no.s	14000
3	Microbial media	2000 gms	18000
4	Antibiotic disc	100 pckts	6000
5	Solvents	6000 ml	20000
Total			52000
Institutional charges (Rs.)			15000
Service charges (Rs.)			10600
Net Total (Rs.)			77600

Total amount Seventy seven thousand six hundred rupees only (Rs. 77,600) utilized for Microbial quality analysis needed by Nithya foods Pvt. Ltd.,

Project incharge

HOD

NF

NITHYA FOODS PVT LTD

NF

15, KoolaKadai Street,
Tenkasi – 627 811
Phone No. 04633-223378
Email Id – vnktamil12@gmail.com

Dr. V. NITHYA KALYANI
Proprietor

Date: 18.03.2020

To

The Head,
Department of Biotechnology,
Prathyusha Engineering College,
Chennai.

Sub: Acknowledgement letter for the Microbial quality test work – reg.

Sir,

We are thankful for the consultancy service for "Microbial quality testing" of ten products. The result is highly useful to improve the product quality. We appreciate your extended activity on this regard.

Thanking you

V. Nithya Kalyani

(Dr. V. NITHYA KALYANI)

2. Identify the major components of bacterial cell wall antigens for preparation of vaccines using animal modal and cell culture techniques

Date:29.11.2019

F.No.9-244/RIFD/MOD/Policy-1/2018-19

All India Council for Technical Education
(A Statutory Body under Ministry of HRD, Govt. of India)
Nelson Mandela Marg, Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

MODROB - Sanction Letter

F.No.9-244/ RIFD/MOD/Policy-1/2018-19 Date: 04.12.2019

To,

The Drawing and Disbursing Officer,
All India Council for Technical Education,
Nelson Mandela Marg, Vasant Kunj,
New Delhi- 110070.

Sub: Release of a sum of Rs.800000/- (Rupees Eight Lakh Only) being the Grant-in-Aid under the schem Modernization and Removal of Obsolescence (MODROB) for the year 2018-19 payable during th current financial year 2019-20- reg.

Sir,

With reference to the proposal submitted by the institute, this is to convey that the sanction of the Council f payment of **Rs.1000000/- (Rupees Ten Lakh Only)** as Grant-in-Aid under the **Modernization and Removal c Obsolescence (MODROB)** scheme, as per details given below:

1.	Name and address of the Beneficiary Institution:	Director/ Principal/ Registrar, PRATHYUSHA ENGINEERING COLLEGE, POONAMALLEE TIRUVALLUR HIGH ROAD ARANVOYALKUPPAM TIRUVALLUR - 602 025 Tamil Nadu -602025		
2.	Title of Project:	Identify the major components of bacterial cell wall antigens for preparation of vaccines using animal modal and cell culture techniques.		
3.	Name of Coordinator:	Dr. DHASARATHAN P		
4.	Duration of the project:	2 Years		
4.	Total Grant-in-aid Sanctioned:	**Total:** Rs.1000000/-	**Non-Recurring (85%):** Rs.850000/-	**Recurring (15%):** Rs.150000/-
5.	Amount to be released during the year 2019-20:	**1st Installment** **Rs.800000/-**	**Non-Recurring (85%):** Rs.680000/-	**Recurring (15%):** Rs.120000/-
6.	Sanctioned grant-in-aid is debitable to:	**Major Head 601.18(a) Gen. (Plan Head)**		

1. The amount of the Grant shall be drawn by the Drawing and Disbursing Officer, All India Council f Technical Education on the Grant-in-Aid bill and shall be disbursed to and credited to the account Director/Principal/ Registrar of the Institute through RTGS/PFMS.
2. This Grant-in-Aid is being released in conformity with the terms & conditions as well as norms of the scher as already communicated, and also being communicated in this letter.

THE INSTRUCTIONS/GUIDELINES TO BE FOLLOWED BY UNIVERSITY/INSTITUTION

I. Release of funds:

a. The Principal/ Director of the institute and the Coordinator of the project are hereby requested to verify the correctness of the under mentioned bank account/ RTGS details submitted by them along with the Proposal, in which the grant is being released:

Institute PAN No.	Bank Name	Bank Branch Name	Branch Address	Account Holder Name	Account Type	Account Number	IFSC
AAATP55 21H	CITY UNION BANK	ASHOK NAGAR/ TAMIL NADU	ASHOK NAGAR/ CHENNAI CHENNAI TAMIL NADU	PRINCIP AL PEC	Current Account	5109090101036 75	CIUB000 0130

In case of any omission the same should be reported to AICTE immediately.

b. The sanction is issued in exercise of the powers delegated to the council and other terms & conditions laid down in the guidelines of the scheme.

c. 100% grant of the sanctioned amount is being released to Government/Govt. Aided institutions Utilization Certificate (UC) and other requisite documents are to be submitted within one month of the completion of the project.

d. To self-financed/Pvt. Institutions 80% of the sanctioned amount is being released as first installment followed by 20% as reimbursement after receipt of UC and other requisite documents as specified in terms & Conditions of MODROB Scheme.

II. Maintenance of accounts:

a) The Institute shall strictly follow the provisions laid down in the scheme document and sanction order No. F.No.9-244/RIFD/MOD/Policy-1/2018-19.Dated 15.11.2019 issued by this office. All correspondences related to the project must contain this number along with year of sanction of the project; failing which correspondence will not be entertained

b) Funds covered by this grant shall be kept separately and would not be mixed up with other funds, so as to know the amount of interest accrued on the grant AICTE.

c) The University/College/Institute shall maintain proper accounts of the expenditure out of the grants, which shall be utilized only on approved items of expenditure (list enclosed).

d) The Council or its nominee shall have the right to check /verify the account to satisfy that the fund has been utilized for the purpose for it was sanctioned.

e) The date of release of the grant by AICTE shall be taken as the date of commencement of the project. The Principal / Director / Registrar shall intimate about the receipt of the grant to AICTE. Any expenditure incurred prior to the issuance of the approval letter will not be allowed to be adjusted in the grant and if the Institution / University do not take the project work within one month of the receipt of the grant, the approval shall ipso facto lapse.

f) After receipt of the grant from AICTE, the Institute shall send a confirmation to AICTE within 2 months of receipt of grant that the sanctioned project has been started/is in progress.

III. Refund of grant by way of a demand draft in favour of Member Secretary, AICTE, New Delhi:

a) If the college/institute does not have the Letter of Approval (LOA) or Extension of Approval issued by AICTE for the academic year 2019-20, the fund released should be immediately refunded to AICTE with interest accrued thereon.

b) If project is not started within six months of the issuance of this Offer Letter, the released amount, along with interest accrued thereon, has to be necessarily returned to AICTE.

c) In any case, if the institute is required to refund the grant or interest accrued thereon or balance amount, the amount will be refunded to AICTE.

d) It may be ensured that the project is completed within the stipulated time. If the project is not completed in time, no further extension will be granted in any case and institute has to refund the entire amount to AICTE.

e) As AICTE needs adequate time for depositing the Demand Draft in the bank, the same be immediately dispatched to avoid any lapse of the validity period.

IV. Submission of documents by college/institution after completion of Project/Subsequent years:

The following mandatory relevant documents are required to be submitted by the college/institution within one month of the completion of the project: -

a) Feedback form in the prescribed proforma.

b) The Annual Progress Report (APR) in the prescribed format along with the original Statement of actual Expenditure in the prescribed proforma duly signed by the Head of the institution and shall be submitted to AICTE not later than one month after completion.

c) The Utilization Certificate (UC) supported by Audited Statement of Expenditure to the effect that the grant has been utilized for the purpose for which it has been sanctioned shall be furnished to the AICTE immediately after completion of the project. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council. Audited Statement of

Expenditure indicating expenditure incurred in the total duration of the project in the prescribed format and GFR-19 shall be submitted to the Council

d) In case of self-financing/private institutions, Statement of actual Expenditure & Utilization Certificate are required to be audited & signed by a Charted Accountant (with membership no full address & stamp). Photocopies of formats are enclosed

e) Program Evaluation Committee (PEC) is required to be constituted at Institutional level. The constitution of the PEC shall be asunder:

i. Principal/Director/Registrar of the Institution(Chairperson)
ii. Coordinator of the project (Member Secretary).
iii. Two HODs and one subject expert(Members).
iv. The members of the said PEC shall not be below the rank of Associate Professor. The minutes of the meetings are to be submitted to the Council at end of the project along with other mandatory documents.

f) Project completion report project indicating the activities undertaking, number of student benefited, laboratory works photographs of students, together with their views is to be submitted.

g) Attested photocopies of supporting vouchers/bills of expenditure incurred for the completion o Project.

h) Photographs of equipment's purchased.

i) The balance amount of the grant will be reimbursed to the university/institution only o submission of the above documents. On receipt of these documents, the total amount of balance c financial assistance, admissible as per the norms, shall be worked out and grant-in-aid shall b released, as second installment, in favour of the beneficiary institution.

V. General instructions

a) The amount of interest accrued on the grant should be treated as part of the grant to be utilized fc that particular project. However, the interest amount accrued along with grant disbursed should nc exceed the total grant sanctioned for the project. The Institute receiving the grant should reflect th same in the audited statement of accounts/ utilization certificate and may either refund the intere amount to AICTE or AICTE shall adjust the same in the next installment of grant before i release.

b) Any unavoidable circumstantial change in the project with respect to name of Project Coordinat for the MODROB project would mandatorily require prior approval of the Council. All suc requests should be addressed to AICTE, in advance, recording the specific reasons for propose changes, failing which the offer for the grant already issued would be treated as automaticall withdrawn and the financial assistance released in favour of the beneficiary institution shall b refunded immediately to the Council. Kindly mention the File No.9-244/RIFD/MOD/Policy 1/2018-19 in your future correspondence.

c) The grantee shall maintain an audited record of assets acquired wholly or substantially out of th Grant-in-Aid and a register of assets shall be maintained by the Institute in the prescribed for i.e.GFR-19.

d) The College / Institute receiving grant under MODROB is expected to put up a plaque at the mai entrance of the Lab/Department, which has been modernized using the grant. All the equipmer procured through the project should be super scribed with AICTE project file number.

e) The assets acquired wholly or substantially out of grant shall not be disposed or encumbered c utilized for the purpose other than those for which the Grant was given without proper sanction c the AICTE and should at any time the institution cease to function, such assets shall revert to th AICTE.

f) The grantee Institution shall observe all financial norms and guidelines as prescribed by th AICTE/ Government of India from time to time. GOI GFR rules (@https://doe.gov.in/orde circular/general-financial-rules2017-0) should be followed during utilization of grant.

Date:29.11.2019

F.No.9-244/RIFD/MOD/Policy-I/2018-19

List of Equipment's approved :

Name of Equipments
High performance liquid chromotography
Sonicator
CO2 Cylinder
Biosafety Cabinet- II
Incinerator
Flow Cyto metry
Cryocan

Yours sincerely,

Prof. **Dileep N. Malkhede**
Advisor-1 (RIFD)

Copy forwarded for information and necessary action to:

16 DEC 2019

1. **Name and Address of the Coordinator,**
   Dr. DHASARATHAN P,
   PRATHYUSHA ENGINEERING COLLEGE,
   PQONAMALLEE - TIRUVALLUR HIGH ROAD
   ARANVOYALKUPPAM TIRUVALLUR - 602 025 Tamil Nadu -602025

2. **The Registrar / Director / Principal,**
   PRATHYUSHA ENGINEERING COLLEGE,
   POONAMALLEE - TIRUVALLUR HIGH ROAD
   ARANVOYALKUPPAM TIRUVALLUR - 602 025 Tamil Nadu -602025

3. **Guard File**

Prof. **Dileep N. Malkhede**
Advisor-1 (RIFD)

8.2	MODERNISATION & REMOVAL OF OBSOLESCENCE Proforma Cum Evaluation Sheet
	Application Id < Value to be generated by E-GOV>

8.2.1	Institute Details		
(a)	Institute Permanent ID No. :		
(b)	Name of the Institute	*PRATHYUSHA ENGINEERING COLEGE*	
(c)	Contact details		
(d)	Email	admin@prathyusha.edu.in	
(e)	FAX	044-37673703	
(f)	Telephone	044 37673767	
(g)	Reference of Extension of Approval letter for the current year	Letter No:	*Date:*
(h)	Is the institute ten years old from its year of Establishment as on date?	*Yes*	
	If 8.2.1 (h) is Yes Proceed to next level Else display message "Sorry Your Institute is less than 10 years old"		

8.2.2	Details of the Project Coordinator			
(a)	Faculty ID			
(b)	Name of the Coordinator			
(c)	Department			
(d)	Appointment Type	Regular	Temporary	Adhoc
(e)	Contact details	**Cell no**	Email	
	As per 8.2.2 (d), If appointment is regular proceed to next level Else display the message "Sorry only regular faculty can be a coordinator"			

8.2.3	Details of the lab to be funded under MODROBS proposal	
(a)	Title of the Project proposal	Identify the major components of bacterial cell wall antigens for preparation of vaccines using animal modal and cell culture techniques.
(b)	Name of the Lab to be funded	Immunology Lab
(c)	Department under which the lab is established	Biotechnology
(d)	AICTE approved Course of the department	*yes*
	If 8.2.2 (c) =8.2.3 (c) proceed to next level Else display the message "Sorry the coordinator must be from the same department under which lab is established "	

8.2.4 **Academic credentials of Coordinator**

	Parameter/ Criteria	Input by Institute	Input by Institute	Max. Marks	Marks Awarded by the System <Value to be generated by E-GOV>	Marks Awarded by the Experts
(a)	PG	*Yes*	*Microbiology*	*1*	*Yes = 1 mark* *No=0 mark*	

(b)	Ph. D	Yes	Immunology	3	Yes = 3 mark No=0 mark	
(c)	Teaching Experience in years	15	Prathyusha Engineering college Sri kaliswari college	2	1 to 5 years= 1 mark More than 5 years=2 marks	
(d)	Research & Industrial Experience in years	1	Deva sea foods pvt ltd.,	2	1 to 3 years= 1 mark More than 3 years=2 marks	
(e)	Number of Publications in last 3 years (National / International journals)	15	<Input by Institute> <Provide space for list of publications details >	2	1 to 3 publications= 1 mark More than 3 publications=2 marks	
(f)	Number of Patents Registered	nil	<Provide space for list of patents >	2	1 or more patent=2 marks Zero patent=0 mark	
(g)	Relevant experience of conducting / coordinating similar programmes from AICTE and other funding agencies in past three years	Yes, 2	Workshop sponsored by Indian academy of science. Seminar sponsored by CSIR	3	1 Program=1 marks 2 Program=2 marks More than 3 programs= 3marks	
		Sub Total		15	<Automated Total>	

8.2.5	Credential of Institution / Department

	Parameter/ Criteria	Input by Institute	Input by Institute	Max. Marks	Marks Awarded by the System <Value to be generated by E-GOV>	Marks Awarded by the Experts
(a)	Type of Institute: (Whether selected under TEQIP)	Entrer Yes/no	<Input by Institute, attach proof>	5	Yes= 5 marks No= 0 Marks	
(b)	Number of Years existence	Number	<Data base of E-Gov>	10	10 to 15 years= 5 marks 16 to 20 years= 7 marks More than 20 years= 10 marks	
(c)	Number of courses Accredited in the Institute.	Enter Number	<Input by Institute>	10	<1 = 5 marks> <2 = 7 marks> <more than 3 = 10 marks>	
(d)	Whether the course under which the proposal is submitted, is accredited by NBA?	Enter Yes/No	<Input by Institute>	10	<if yes= 10 marks No= 0 marks>	
			Sub Total	35	<Automated Total>	

8.2.6	Justification of the project:				
(a)	Major equipment available in the lab *<Input by Institute>*				
	S.No.	Name of equipment	Make and model	Cost in Rs.	Year purchased
	1	Elisa Strip Reader	Qualisystem	1,90,000.00	2005
	2	Elisa washer	Robonic	2,12,400.00	2007
	3	Cooling centrifuge	Remi	1,22,100.00	2006
	4	Fluorescent microscope	Labmed	2,03,840.00	2007
	5	Fermentor	Sartorius	7,50,000.00	2005
	6	Ultra centrifugation (2 Nos)	Millipore	4,00,000.00	2006
	7	Co2 Incubator	Nuari	3,19,500.00	2004
	8	Refrigerated Centrifuge	5804 R/Eppendorf	4,25,000.00	2010
	9	Refrigerated centrifuge	Remi R – 24	1,32,000.00	2005
	10	PCR	Eppendorf	1,75,000.00	2005
	11	Gel Documentation	Yarcard	2.95.000.00	2004

	Parameter / Criteria	Input by Institute	Max. Marks	Marks Awarded by Experts
(b)	Objectives **Current lab utilization** **Strength & Weakness of lab**	*<Input by Institute maximum 300 words>*	10	
(c)	Relevance/Improvements in the scope of old experiments conducted.	*<Input by Institute maximum 200 words>*	10	
(d)	Technical novelty and utility	*<Input by Institute maximum 150 words>*	20	
(e)	Benefits to students and staff	*<Input by Institute maximum 150 words>*	10	
	Sub Total		**50**	
	Grand Total		**100**	

Department	**Biotechnology**
Lab to be funded	**Immunology Lab**
Current lab utilization	Name of the lab / Number of students / Number of hours utilized / Overall utilization Lab in Immunology — 34 — 4 hrs/ week Lab in Genetic Engineering — 32 — 4 hrs / week Project work — 34 — 20 hrs/ week Overall utilization: 28 hrs / week
Strength & Weakness of lab	**Strength:** Facilities are available to learn modern techniques and to basic research in the field of modern biology. **Weakness:** Update and purchase of modern equipments are need for strengthen the research and modern techniques in modern biology.
Total cost of equipment in lab	Give total cost of equipment available in lab **Rs. 32,24,840.00**

IMMUNOTECHNOLOGY

Title of proposal

Identify the major components of bacterial cell wall antigens for preparation of vaccines using animal modal and cell culture techniques.

Abstract

Serological proteome analysis proved to be a powerful tool for the identification of novel bacterial antigens, which provide a basis for rational vaccine design. In the same way as for mammalian cells, the introduction of fluorescently labelled antibodies against bacterial antigens fixed permeabilized cells gives access to accurate data on the cell cycle. Parallel developments in immunofluorescence and DNA technologies benefit FCM. As with chromosomes and mammalian cells, the next revolution will encompass, pass the possibility of amplifying any DNA or RNA sequence by polymerase chain reaction (PCR), reverse transcriptase-associated PCR (RT-PCR), and perhaps *in situ* PCR associated with FCM analysis and sorting.

Objective

Identify the major components of bacterial cell wall antigens for preparation of vaccines using animal modal and cell culture techniques for development in the field of immunotechnology.

Project Impact - Expected outcome

The scope of the old experiments providing the techniques of immunization and bleeding, preparation of serum and plasma, immunoassays (mostly those using solid supports), immunoprecipitation of cellular antigens, immunoagglutination cellular antigens, immunoblotting and immunoaffinity purification. Advances in the applications of FCM to animal cells facilitated the emergence of simpler, cheaper and more sensitive equipment, which was essential for the spread of this technology in the immunology laboratories. Most early work (1975-1985) gave the impression of pilot studies designed to demonstrate the feasibility of applying FCM to microbial cells. Now, however, FCM is dedicated to solving specific biological problems.

New experiments/Demonstration of new technology/other

Lipopolysaccharide structure and its role in bacterial adhesion and pathogenicity have been investigated using flow cytometry and antibodies screening method, sometimes combined with other techniques. In Gram-positive bacteria, pathogenic fungi, and parasitic flagellates, monoclonal antibodies have also been employed to define phenotypic variations in epitope expressions of outer surface components in relation to the pathogenicity of the microbial cell. Flow cytometry has characterized cytotoxic immunoconjugate binding to *Candida tropicalis* cells and has been used to determine the minimal concentration required to obtain cytotoxicity. Monoclonal antibodies characterized by FCM allowed differentiation of the pathogenic amoeba, *Acanthamoeba*, which causes granulomatous amoebic encephalitis. In biotechnology, monocional antibodies and FCM were used to select engineered *E coli* clones expressing antigenic determinants from the environment.

8.2.7	Budget Estimates – Non Recurring							
(a)	S.No.	Proposed equipment/s	Specifications	Number of units	Estimated Cost in Rs.	Experts Recommendation (If proposal is recommended)		
						Yes/No	Number of units	Amount in Rs.
	1.	Sonicator	Input: 120 V 60 Hz, 85 VA ETL and C-ETL Listed: Model ME 940 Weight: 11 pounds Dimensions: 4.9 in (H) x 13.6 in (W) x 10.5 in (D) Maximum Treatment Time: 60 minutes– electrical stimulation	1	62,000.00			

			30 minutes– ultrasound or combination therapy Treatment Timer: Treatment time counts down to zero. The digital timer indicates time in minutes and seconds. The timer also indicates the remaining treatment time during the "Hold" period.					
	2.	CO2 Cylinder	**SERVICE PRESSURE:** 1800 psi / 124 bar **MATERIAL:** Every cylinder is produced from high strength aluminum alloy 6061-T6	1	75,000.00			
	3.	Biosafety Cabinet- II	Main body should be made of stainless steel [(304 grade)- Heavy gauge- 16 G] . Table top and working zone should be made of stainless steel [(304 grade)- Heavy gauge- 14 G &16 G]	1	75,000.00			
		Incinerator	Fluidized bed incinerators contai n inert granular material that expands and acts theoretically as a fluid when gases are injected up through the material bed from nozzles. This type of incinerator has operating temperat ures of 1400-1800° F (750 -1000° C). They can incinerate liquid, sludge, solids, or gases.	1	2,00,000.00			
		Flow Cyto metry	Built on more than 25 years of BD experience and leadership in flow cytometry and multicolor analysis, the BD FACSCanto™ II	1	4,00,000.00			

			system is an easy-to-use benchtop analyzer that delivers proven performance, accuracy, and high-quality results. The BD FACSCanto II can be configured with two or three lasers to detect up to eight colors. It features many innovations, including a true fixed alignment flow cell to minimize startup time and improve reproducibility. The optical system maximizes signal detection and increases sensitivity and resolution for each color in a multicolor assay. These and other capabilities make the BD FACSCanto II ideal for today's busy clinical lab, providing a high degree of automation and quality control. With optimal reproducibility, the BD FACSCanto II system reduces hands-on technician time and costs associated with repeat testing.				
		Cryocan	Capacity LN2 ltrs 1.5 Empty Weight Kgs 2.2 Full Weight Kgs 3.4 Neck Dia mm 30 Outer Dia mm 175 Total Height mm 407	1	45,000.00			
		Total (NON RECURRING) Budget Estimate			**<Automated Total>**	Total amount recommended by experts		**Rs. ABC**

8.2.8	Recurring Budget
	Requested for Recurring Budget: YES
	If Recurring = No, then no need of generating this table If recurring = yes, Maximum Recurring Permissible PQR = <Rs. ABC divided by 85 and multiplied by 15> (to be calculated by the system)
8.2.9	Total Recommended Amount = <Rs.ABC + Rs.PQR>

Declaration:

I/We solemnly confirm and verify that the information uploaded on the portal in respect of this proposal for seeking grant from AICTE under AQIS is true and correct to the best of our knowledge and belief. In case, at any point of time it is found that information provided in this proposal is false or incorrect, AICTE will be at liberty to withdraw the grant given to us and we shall be liable to refund the entire amount of the grant with interest thereon and also liable for any other action that AICTE may deem fit. We also understand that AICTE may not consider our future proposal in this circumstance.

The applicant will put a tick in a box provided... unless this is ticked the application should not be submitted... also display confirmation message that I have read the declaration and I/we confirm the same.

3. Consultancy - Enviro informatics software tools

Praveena BIOTECH <praveena.biotech@prathyusha.edu.in>

Fwd: Placing an order and requesting quotation for Enviro-Informatics software tool

HOD BIOTECH <hod.biotech@prathyusha.edu.in> Thu, Oct 17, 2019 at 2:01 PM
To: "praveena.biotech" <praveena.biotech@prathyusha.edu.in>

Plz prepare quotation and send as early as possible

---------- Forwarded message ---------
From: **Ajay Singh** <ajay@slickalpha.com>
Date: Thu, Oct 17, 2019 at 1:37 PM
Subject: Placing an order and requesting quotation for Enviro-Informatics software tool
To: <principal@prathyusha.edu.in>
Cc: <hod.biotech@prathyusha.edu.in>

Ref: SA/10/2019
Dated: 17.10.19

To
The Principal,
Prathyusha Engineering College,
Chennai - 602025

Attn: Hod Biotech and Bio-Informatics

Sir,

Sub: Placing an order and requesting quotation for Enviro-Informatics software tool. Reg.

I am pleased to place an order for your Bio-Informatics Division of Biotech Dept to prepare a meta-genomics software tool to analyze marine microbes with the instruction to operate the tool. Kindly quote your best pricing for this tool and time required to supply.

Thanking you,

Sincerely,

Ajay Singh
Director,
Slickalpha Digital (P) Limited.
Tamarai Tech Park, Guindy - 600032
Web : www.slickalpha.com

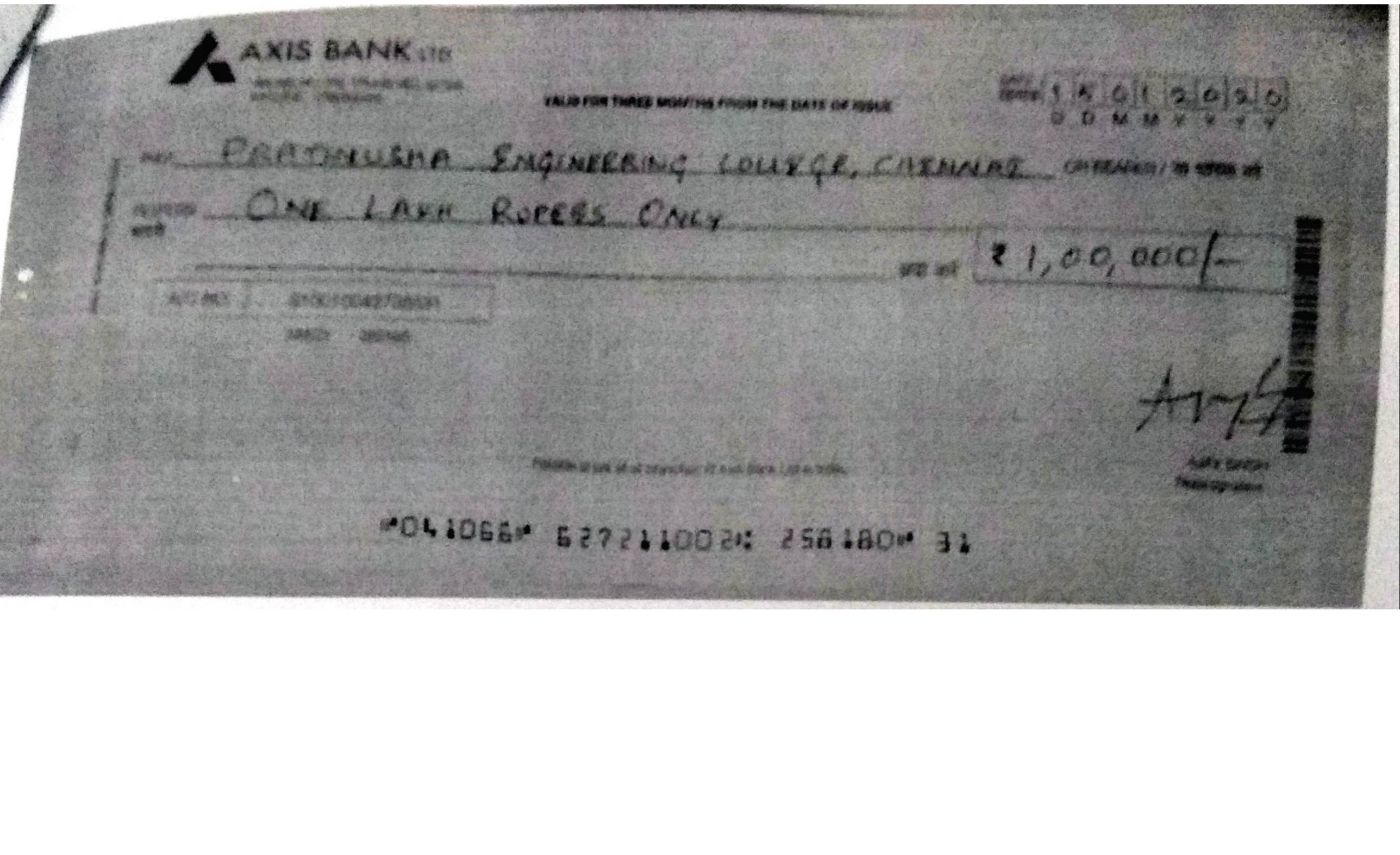
--
Thanks

Head, Dept.of Biotechnology
Prathyusha Engineering College

PEC BT Vision:

We, at the department of Biotechnology, impart quality technical education of global standards to the students, making them technologically superior and higher calibre and also ethically sound to serve the nation.

PEC BT Mission:



REPORT ON PROJECT PROPOSAL

"TOOL DEVELOPMENT FOR ISOLATED FUNGAL SPECIES IDENTIFICATION"

FACULTY COORDINATORS:

Dr. P. DHASARATHAN

HEAD , DEPARTMENT OF BIOTECHNOLOGY

Dr.A.PRAVEENA

ASSOCIATE PROFFESSOR, DEPARTMENT OF BIOTECHNOLOGY

Dr.THENMOZHI

ASSOCIATE PROFFESSOR, DEPARTMENT OF BIOTECHNOLOGY

STUDENT COORDINATOR

YUKTHA.S.SHREENIVASAN

IV YEAR B.TECH BIOTECHNOLOGY

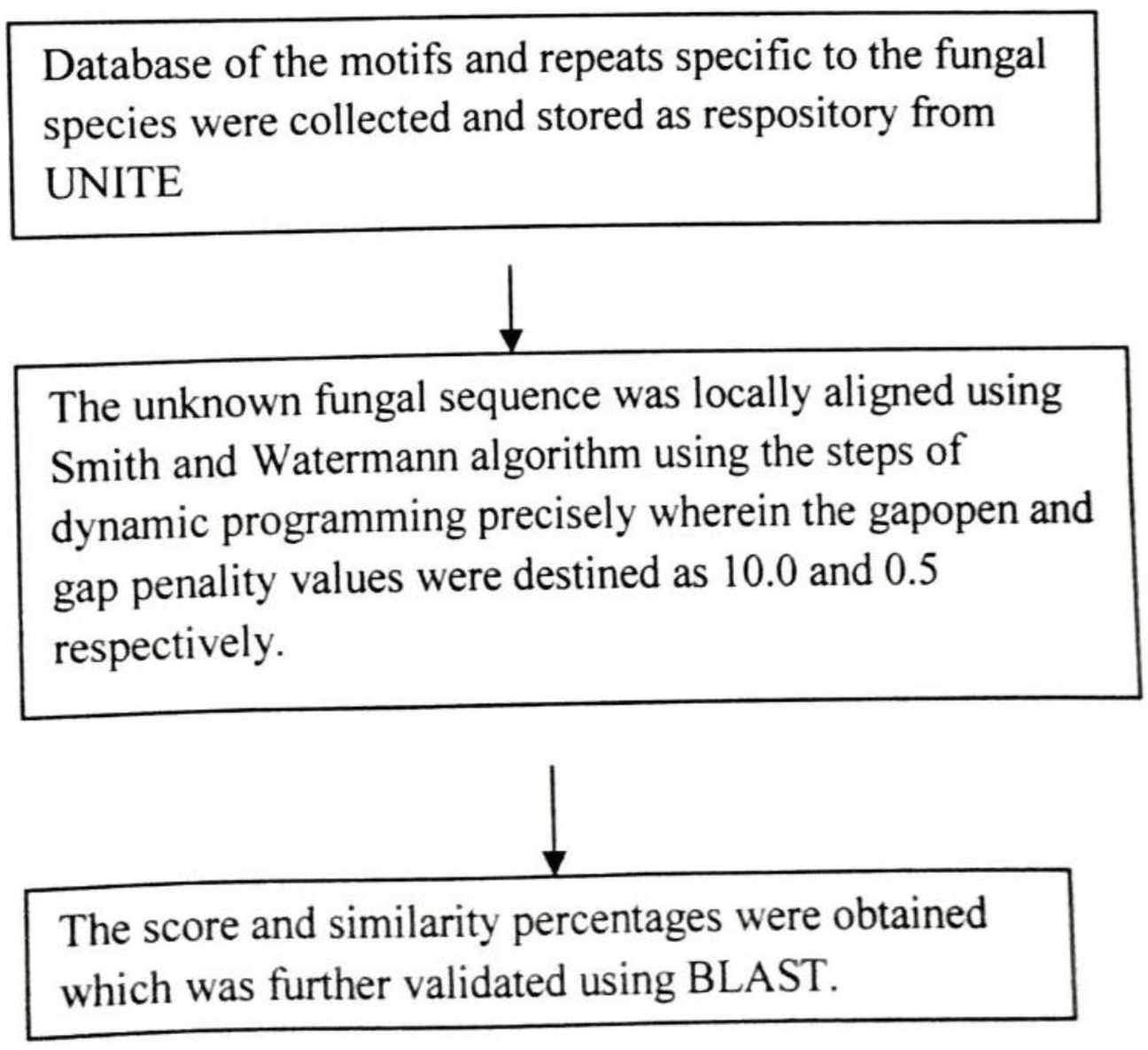
REPORT ON THE "MYKOTIKAS FINDER"

TOOL DEVELOPED FOR IDENTFICATION OF FUNGAL SPECIES

ABSTRACT

The fungal species identification is often a herculean task due to which, there aren't any fungal sequence identification tool or software being exclusively available. The existing motif identification tools and software though are known to provide a unified portal for online discovery and analysis of sequence motifs representing features such as DNA binding sites and protein interaction domains, are not exclusively available for fungal species identification. To overcome this limitation, the Mykotikas Finder targets the fungal species specific ITS regions to be aligned with the given fungal sequences using Smith and Watermann algorithm. This eliminates the interference of homologous motifs with the fungal species thereby stands to provide authenticated results. The result upon comparison with the standard local alignment tool BLAST, was observed to show positive, coherent results respectively. Mykotikas Finder is a web based tool which is aimed to be accessible easily by academicians and research scholars. Further, to provide a possibility for evolution mutation and other speciation events, this tool distinguishes the existing fungal specific motifs from the prospective fungal specific motifs thereby preventing the occurrence of false positive results respectively.

METHODOLOGY



Step 1:

The authorized database for mycology was utilized for feeding the data of the motifs used in the tool developed. Unite is a web-based database and sequence management environment for the molecular identification of fungi. It targets the formal fungal barcode—the nuclear ribosomal internal transcribed spacer (ITS) region—and offers all ~1 000 000 public fungal ITS sequences for reference which was being utilized for developing Mykotikas Finder. Unlike Mycobank which uses polyphasic approach to identify the fungal species, Mykotikas Finder offers ITS region specific identification of the fungi at species and genus levels.

Step 2:

The dynamic programming following Smith and Watermann algorithm is used to calculate the local alignment of the unknown sequence and the motif present in the tool. It uses the following steps:

1. Initialization of a matrix.

2. Matrix Filling with the appropriate scores.

3. Trace back the sequences for a suitable alignment.

To study the Local sequence alignment consider the given below sequences.

CGTGAATTCAT (sequence#1 or A) GACTTAC (sequence #2 or B) The two sequences are arranged in a matrix form with A+1columns and B+1rows.

The second and crucial step of the algorithm is filling the entire matrix, so it is more important to know the neighbor values (diagonal, upper and left) of the current cell to fill each and every cell.

$$M_{i,j} = Maximum\ [M_{i-1,j-1} + S_{i,j}, M_{i,j-1} + W, M_{i-1,j} + W, 0]$$

From the above calculations the maximum value obtained is 0. Finding the maximum value for Mi,j position, one can notice that there is no chance to see any negative values in the matrix, since we are taking 0 as lowest value. After filling the matrix, keep the pointer back to the cell

from where the maximum score has been determined. In the similar all the values of the matrix of the cell were filled.

Step 3:

Following this, to validate our sequence alignment results we used, BLAST which compared nucleotide sequences to sequence databases and calculated the statistical significance.

RESULTS AND DISCUSSION

Below, we have provided the results of Mykotikas finder based on its proficiency in identifying the *Candida albicans* sequence respectively and the data is validated as follows with BLAST.

```
########################################
# Commandline: Mykotikas Finder
#     -auto
#     -stdout
#     -asequence I20200206-035835-0805-57322056-p1m.asequence
#     -bsequence I20200206-035835-0805-57322056-p1m.bsequence
#     -datafile EDNAFULL
#     -gapopen 10.0
#     -gapextend 0.5
#     -aformat3 pair
#     -snucleotide1
#     -snucleotide2
# Align_format: pair
# Report_file: stdout
########################################

#---------------------------------------
#
# Aligned_sequences: 2
# 1: MN944542.1
# 2: MOTIF_001
# Matrix: EDNAFULL
# Gap_penalty: 10.0
# Extend_penalty: 0.5
#
# Length: 21
# Identity:        21/21 (100.0%)
# Similarity:      21/21 (100.0%)
# Gaps:             0/21 ( 0.0%)
# Score: 105.0
#
#
#---------------------------------------

MN944542.1         377 CTTGAAAGACGGTAGTGGTAA     397
                       |||||||||||||||||||||
EMBOSS_001           1 CTTGAAAGACGGTAGTGGTAA      21


#---------------------------------------
#---------------------------------------
```

Fig 1: Results of mykotikas finder for *Candida albicans*

The above results explicitly shows the score and similarity percentage obtained by using the Mykotikas Finder to identify the fungal species

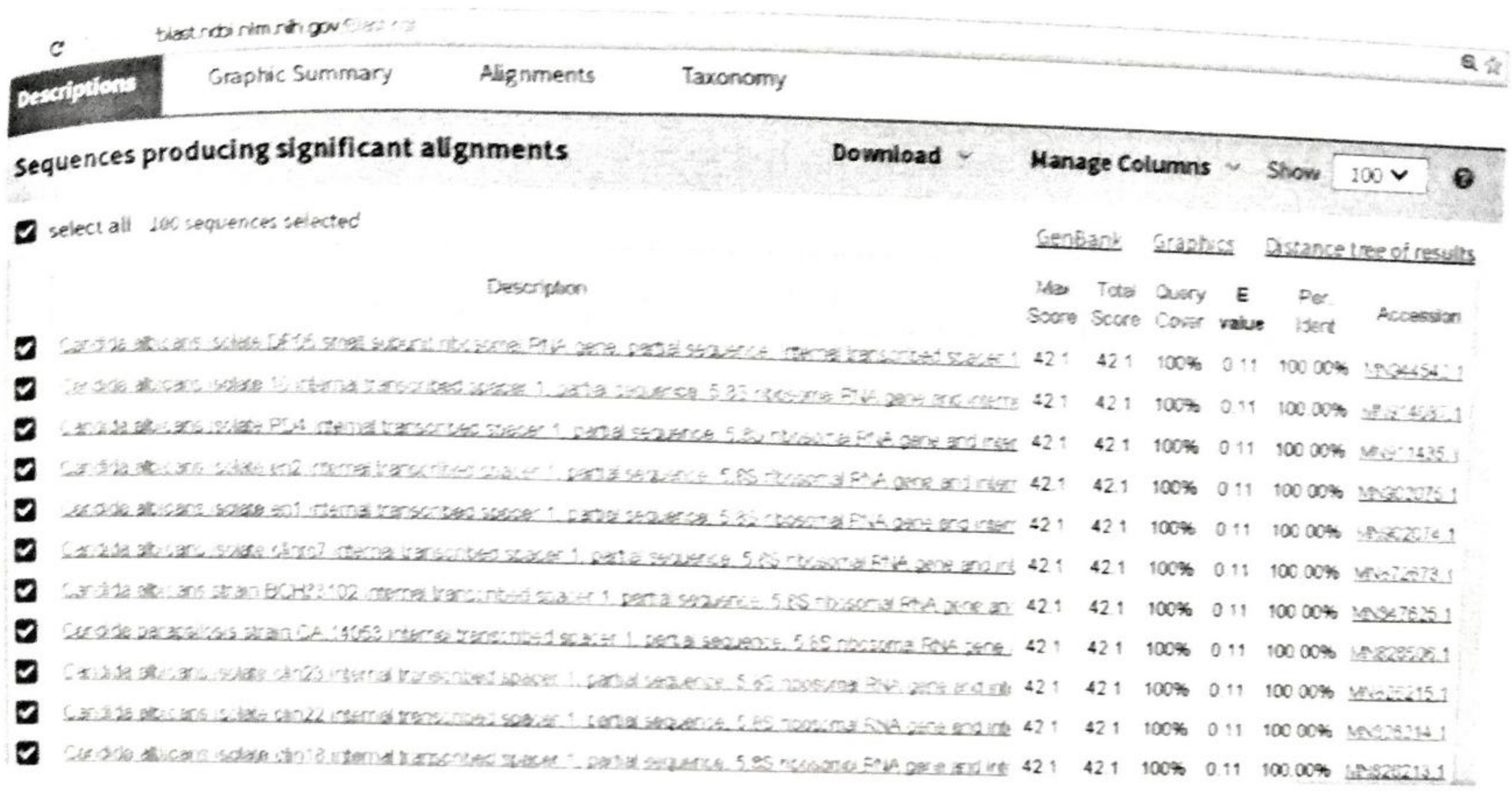


Fig 2 : Results obtained upon BLAST search

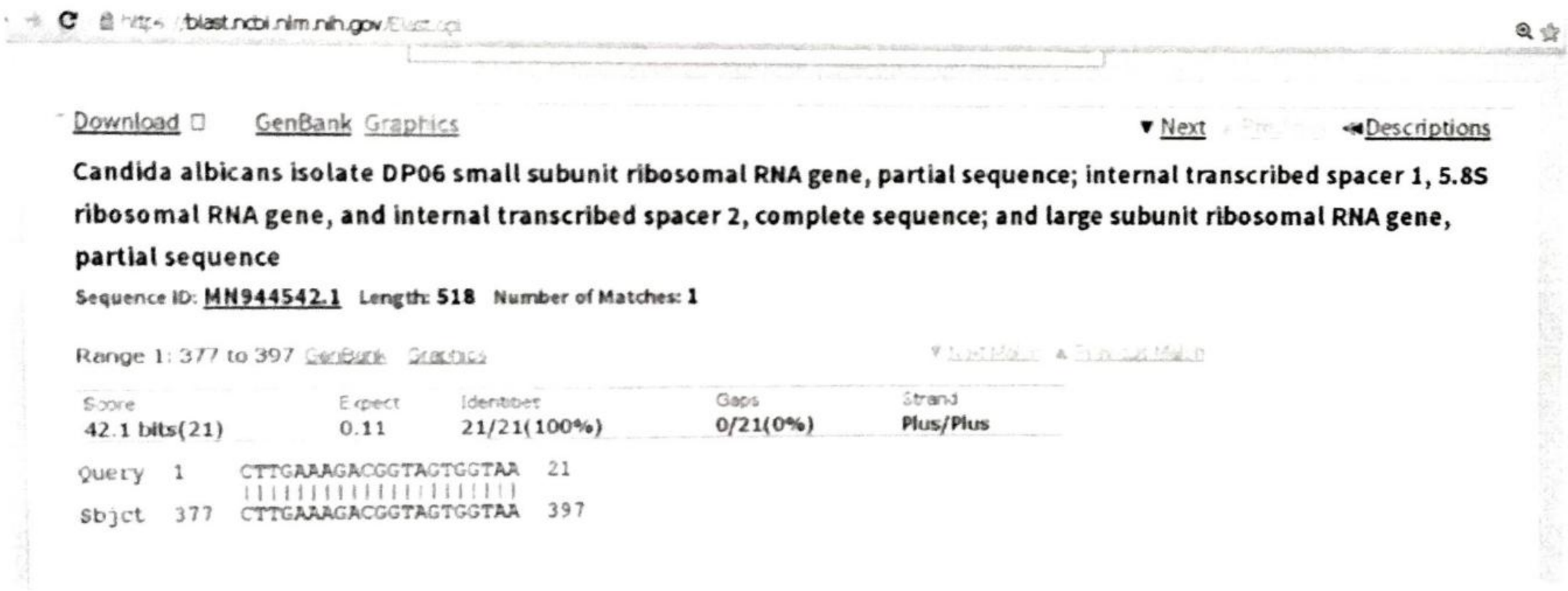


Fig 3: score calculation based on Blast algorithm

The above result portrays the validated results based on the score calculation using the heuristic blast algorithm respectively. In order to provide comprehensive results comparing Mykotikas Finder and BLAST, the following table is formulated with the results.

Table 1: Comparative results from Mykotikas Finder and Blast.

RESULTS FROM MYKOTIKAS FINDER	RESULTS FROM BLAST
Candida albicans genome sequence shows 100% similarity with the motif of ITS 1 region with a score of 105 respectively	The *Candida albicans* genome shows similarity with the ITS 1 region with 100% identity and further enables in selecting a validated motif similar to that of the Mykotikas Finder

In the similar manner as above, Mykotikas Finder aims to develop a repository of motif data which could be applied for aligning and determining the unknown fungal species respectively.

4. Implementation of data analytics lab

All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)
Nelson Mandela Marg,VasantKunj, New Delhi-110070 Website: www.aicte-india.org

MODROB - Sanction Letter

F.No.9-83/IDC/MODROB/Policy-1/2019-20 Date: 20.07.2020

To

The Drawing and Disbursing Officer,
All India Council for Technical
Education, Nelson Mandela Marg,
Vasant Kunj, New Delhi - 110070

Sub: Release of a sum of **Rs.1213020/- (Rupees Twelve Lakh Thirteen Thousand Twenty Only)** being the **Grant-in-Aid** under the scheme **Modernization and Removal of Obsolescence (MODROB)** for the year **2019-20** payable during the current financial year **2020-21-** reg.

Sir,

With reference to the proposal submitted by the institute, this is to convey that the sanction of the Council for payment of **Rs.1516275/- (Rupees Fifteen Lakh Sixteen Thousand Two Hundred SeventyFive Only)** as Grant-in-Aid under the **Modernization and Removal of Obsolescence (MODROB)** scheme, as per details given below:

1.	Name and address of the Beneficiary Institution:	Director/ Principal/ Registrar, **PRATHYUSHA ENGINEERING COLLEGE, POONAMALLEE - TIRUVALLUR HIGH ROAD ARANVOYALKUPPAM TIRUVALLUR - 602 025**		
2.	Title of Project:	IMPLEMENTATION OF DATA ANALYTICS LAB		
3.	Name of Coordinator:	Dr. PADMAPRIYA S		
4.	Duration of the project:	2 years		
4.	Total Grant-in-aid Sanctioned:	**Total:** Rs.1516275/-	Non-Recurring (85%): Rs.1288833/-	Recurring (15%): Rs.227441/-
5.	Amount to be released during the year 2020-21:	**1st Installment** Rs.1213020/-	Non-Recurring (85%): Rs.1031067/-	Recurring (15%): Rs.181953/-
6.	Sanctioned grant-in-aid is debatable to:	**Major Head 601.18(a) Gen. (Plan Head)**		

1 The amount of the Grant shall be drawn by the Drawing and Disbursing Officer, All India Council for Technical Education on the Grant-in-Aid bill and shall be disbursed to and credited to the account of Director/Principal/ Registrar of the Institute through RTGS/PFMS.

2 This Grant-in-Aid is being released in conformity with the terms & conditions as well as norms of the scheme as already communicated, and also being communicated in this letter.

The instructions/guidelines to be followed by University/Institution

I. Release of funds

a The Principal/ Director of the institute and the Coordinator of the project are hereby requested to verify the correctness of the undermentioned bank account/ RTGS details submitted by them along with the Proposal, in which the grant is being released:

Institute PAN No.	Bank Name	Bank Branch Name	Bank Branch Address	Account Holder Name	Account Type	Account Number	IFSC Code
AAATPSS 2IH	STATE BANK OF INDIA	ASHOK NAGAR/ TAMIL NADU	ASHOK NAGAR/ TAMIL NADU CHENNAI CHENNAI TAMIL NADU	PRINCIPA L,PRATHY USHA ENGINEER ING COLLEGE	Current Account	38418263794	SBIN0000 937

In case of any omission the same should be reported to AICTE immediately.

b. The sanction is issued in exercise of the powers delegated to the council and other terms & conditions laid down in the guidelines of the scheme.

c. 100% grant of the sanctioned amount is being released to Government/Govt. Aided institutions. Utilization Certificate (UC) and other requisite documents are to be submitted within one month of the completion of the project.

d. To self-financed/Pvt. Institutions 80% of the sanctioned amount is being released as first installment followed by 20% as reimbursement after receipt of UC and other requisite documents as specified in terms & Conditions of MODROB Scheme.

II. Maintenance of accounts

a. The Institute shall strictly follow the provisions laid down in the scheme document and sanction order No. F.No.9-83/IDC/MODROB/Policy-1/2019-20 dated 20.07.2020 issued by this office. All correspondences related to the project must contain this number along with year of sanction of the project; failing which correspondence will not be entertained.

b. Funds covered by this grant shall be kept separately and would not be mixed up with other funds, so as to know the amount of interest accrued on the grant AICTE.

c. The University/College/Institute shall maintain proper accounts of the expenditure out of the grants, which shall be utilized only on approved items of expenditure (list enclosed).

d. The Council or its nominee shall have the right to check /verify the account to satisfy that the fund has been utilized for the purpose for it was sanctioned.

e. The date of release of the grant by AICTE shall be taken as the date of commencement of the project. The Principal / Director / Registrar shall intimate about the receipt of the grant to AICTE. Any expenditure incurred prior to the issuance of the approval letter will not be allowed to be adjusted in the grant and if the Institution / University do not take the project work within one month of the receipt of the grant, the approval shall ipso fact lapse.

f. After receipt of the grant from AICTE, the Institute shall send a confirmation to AICTE within 2 months of receipt of grant that the sanctioned project has been started/is in progress.

III. Refund of grant by way of a demand draft in favour of Member Secretary, AICTE, New Delhi

a. If the college/institute does not have the Letter of Approval (LOA) or Extension of Approval issued by AICTE for the academic year 2020-21, the fund released should be immediately refunded to AICTE with interest accrued thereon.

b. If project is not started within six months of the issuance of this Offer Letter, the released amount, along with interest accrued thereon, has to be necessarily returned to AICTE.

c. In any case, if the institute is required to refund the grant or interest accrued thereon or balance amount, the amount will be refunded to AICTE.

d. It may be ensured that the project is completed within the stipulated time. If the project is not completed in time, no further extension will be granted in any case and institute has to refund the entire amount to AICTE.

e. As AICTE needs adequate time for depositing the Demand Draft in the bank, the same be immediately dispatched to avoid any lapse of the validity period.

IV. Submission of documents by college/institution after completion of Project/Subsequent years.

The following mandatory relevant documents are required to be submitted by the college/institution within one month of the completion of the project: -

a. Feedback form in the prescribed proforma.

b. The **Annual Progress Report (APR)** in the prescribed format along with the original Statement of actual Expenditure in the prescribed proforma duly signed by the Head of the institution and shall be submitted to AICTE not later than one month after completion.

c. The **Utilization Certificate (UC)** supported by Audited Statement of Expenditure to the effect that the grant has been utilized for the purpose for which it has been sanctioned shall be furnished to the AICTE immediately after completion of the project. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council. Audited Statement of Expenditure indicating expenditure incurred in the total duration of the project in the prescribed format and GFR-19 shall be submitted to the Council.

d. In case of self-financing/private institutions, Statement of actual Expenditure & Utilization Certificate are required to be audited & signed by a Charted Accountant (with membership no., full address & stamp). Photocopies of formats are enclosed.

e. **Program Evaluation Committee (PEC)** is required to be constituted at Institutional level. The constitution of the PEC shall be asunder:

(i) Principal/Director/Registrar of the Institution(Chairperson)
(ii) Coordinator of the project (Member Secretary),
(iii) Two HODs and one subject expert(Members).

The members of the said PEC shall not be below the rank of Associate Professor. The minutes of the meetings are to be submitted to the Council at end of the project along with other mandatory documents.

f. Project completion report project indicating the activities undertaking, number of students benefited, laboratory works photographs of students, together with their views is to be submitted.

g. Attested photocopies of supporting vouchers/bills of expenditure incurred for the completion of Project.

h. Photographs of equipment's purchased.

i. The balance amount of the grant will be reimbursed to the university/institution only on submission of the above documents. On receipt of these documents, the total amount of balance of financial assistance, admissible as per the norms, shall be worked out and grant-in-aid shall be released, as second installment, in favour of the beneficiary institution.

V. General instructions

a. The amount of interest accrued on the grant should be treated as part of the grant to be utilized for that particular project. However, the interest amount accrued along with grant disbursed should not exceed the total grant sanctioned for the project. The Institute receiving the grant should reflect the same in the audited statement of accounts/ utilization certificate and may either refund the interest amount to AICTE or AICTE shall adjust the same in the next installment of grant before its released.

b. Any unavoidable circumstantial change in the project with respect to name of Project Coordinator for the MODROB project would mandatorily require prior approval of the Council. All such requests should be addressed to AICTE, in advance, recording the specific reasons for proposed changes, failing which the offer for the grant already issued would be treated as automatically withdrawn and the financial assistance released in favour of the beneficiary institution shall be refunded immediately to the Council. Kindly mention the File No.9-1/RIFD/MOD/Policy-1/2019-20 in your future correspondence.

c. The grantee shall maintain an audited record of assets acquired wholly or substantially out of the Grant-in-Aid and a register of assets shall be maintained by the Institute in the prescribed form i.e.GFR-19.

d. The College / Institute receiving grant under MODROB is expected to put up a plaque at the main entrance of the Lab/Department, which has been modernized using the grant. All the equipment procured through the project should be super scribed with AICTE project file number.

e. The assets acquired wholly or substantially out of grant shall not be disposed or encumbered or utilized for the purpose other than those for which the Grant was given without proper sanction of the AICTE and should at any time the institution cease to function, such assets shall revert to the AICTE.

f. The grantee Institution shall observe all financial norms and guidelines as prescribed by the AICTE/ Government of India from time to time. GOI GFR rules (@https://doe.gov.in/order-circular/general-financial-rules2017-0) should be followed during utilization of grant.

List of Equipment's approved:

Name of Equipments
Dell Precision 5820 Tower Workstation
Workstation Dell Precision T1700
virtualization software
Network attached storage drive
10*10 TB SAN storage
System attached network storage device
Data Visualization Tool
UPS

Yours sincerely,

Dr. Neeraj Saxena
Advisor - II (IDC)

Copy forwarded for information and necessary action to:

1. **Name and Address of the Coordinator,**
   Dr. PADMAPRIYA S
   PRATHYUSHA ENGINEERING COLLEGE,
   POONAMALLEE - TIRUVALLUR HIGH ROAD ARANVOYALKUPPAM TIRUVALLUR - 602 025 602025

2. **The Registrar / Director / Principal,**
   Dr. PADMAPRIYA S
   PRATHYUSHA ENGINEERING COLLEGE
   POONAMALLEE - TIRUVALLUR HIGH ROAD ARANVOYALKUPPAM TIRUVALLUR - 602 025 602025

3. **Guard File**

Dr. Neeraj Saxena
Advisor - II (IDC)

F.No.9-83/IDC/MODROB/Policy-1/2019-20