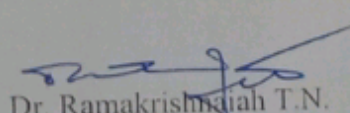


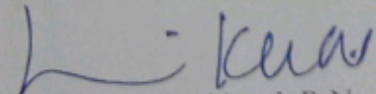
DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that the dissertation entitled, "BIOINFORMATICS TECHNIQUES USED TO ANALYSE THE SEQUENCES AND VARIATIONS OF PHENYLKETONURIA submitted by Ms. N. NAGAA SAI YAMMINE (S2014430) Ms. NITYASREE NATARAJAN(S2014432), Mr. PARTH KHANDURI(S2014433),, Mr. RITHIEK RAGHUL(S2014440), Ms. SWATHI S(S2014452) to Bengaluru City University in partial fulfilment of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and Biochemistry) is based on the work carried out by him under our guidance and supervision during the year 2022-2023.

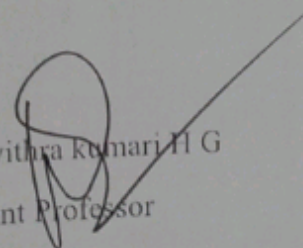

Dr. Ramakrishnaiah T.N.

Assistant Professor


Dr. Lakshmi kanth R N

Professor and Head of the Department

Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce


Dr. Pavithra Kumari H G
Assistant Professor



RAMAIAH
College of Arts, Science
& Commerce

ಎಮ್ ಎಸ್ ರಾಮಯ್ಯ ಕಲಾ, ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಕಾಲೇಜು

M S Ramaiah College of Arts, Science and Commerce

Re-accredited 'A' by NAAC, Permanently Affiliated to Bengaluru City University,

Approved by Government of Karnataka, Approved by AICTE, New Delhi,

Recognized by UGC under 2f & 12B of UGC act 1956



(National Institutional Ranking Framework, Ministry of Education, Govt of India)

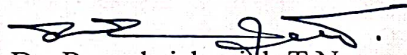
Ranked 55th in NIRF India Ranking by MHRD, New Delhi

DBT Star College Scheme

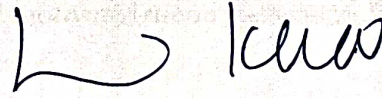
DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that the dissertation entitled, "BIOINFORMATICS TECHNIQUES USED TO ANALYSE THE SEQUENCES AND VARIATIONS OF CORYCEPS submitted by Govindaraj N(S2014421), R Bhavishya (S2014411), Atul R Namboothiri (S2014410) to Bengaluru City University in partial fulfilment of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and Biochemistry) is based on the work carried out by him under our guidance and supervision during the year 2022-2023.

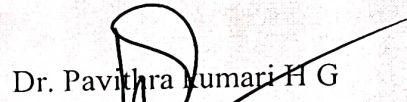

Dr. Ramakrishnaiah T.N.

Assistant Professor



Dr. Lakshmi Kanth R N

Professor and Head of the Department
Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce


Dr. Pavithra Kumari H G
Assistant Professor

CERTIFICATE

This is to certify that the dissertation entitled "BIOINFORMATICS TECHNIQUES USED TO ANALYSE MOLECULAR VARIATION OF EUGENOL IN DIFFERENT PLANT SPECIES AND THEIR THERAPEUTIC USES", submitted by Bhuvanjee Basnett (S201412), Harshitha Shree B S (S201422), Hima R (S201423), K K Sheetal Soumyanadhan (S201424), to Bengaluru City University in partial fulfilment of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and Biochemistry) is based on the work carried out by under our guidance and supervision during the year 2022-2023.


DR. Ramakrishnaiah T. N.

Assistant Professor


DR. Pavithra Kumari H G

Assistant Professor


DR. Lakshmikanth R N

Professor and Head of the Department

Department of Genetics
M.S. Ramaiah College of
Arts, Science and Commerce

CERTIFICATE

This is to certify that the dissertation entitled "BIOINFORMATICS TECHNIQUES USED TO ANALYSE MOLECULAR VARIATION OF NEUROMEDIN IN HUMANS, DOGS, RATS, MOUSE AND BOVINE", submitted by Seanna Crystal Monteiro (S2014443), Sagufta Patel (S2014441), Satyam Kumar (S2014442), Sneha Manjunath (S2014450), Nischith Skanda (S2014431) to Bengaluru City University in partial fulfilment of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and Biochemistry) is based on the work carried out by under our guidance and supervision during the year 2022-2023.



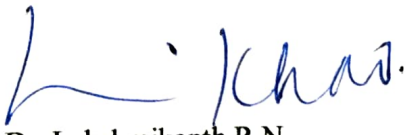
Dr. Ramakrishnaiah T.N

Assistant Professor



Dr. Pavithra Kumari H.G

Assistant Professor



Dr. Lakshmikanth R.N

Professor and Head Of Department Biotechnology And Genetics

Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce

M S RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE

MSR Nagar, MSRIT Post, Bengaluru-560054, Karnataka, India

DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that dissertation entitled "BIOINFORMATICS TECHNIQUES USED TO ANALYSE BREAST CANCER PROTEIN SEQUENCE VARIATION IN DIFFERENT SPECIES" submitted by Monisha G, Pratheeksha G, Tejaswini Lokesh R, to Bengaluru City University in partial fulfilment of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and Biochemistry) is based on the work carried out by her under our guidance and supervision during the year 2022-2023.


Dr. Ramakrishnaiah T N


Dr Pavithra Kumari H G



Dr. Lakshmikanth R.N.

Head of the Department

Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce

CERTIFICATE

This is to certify that this dissertation entitled, "**BIOINFORMATICS TECHNIQUES USED TO ANALYSE MOLECULAR VARIATION AND CONSTRUCT PHYLOGENETIC TREE ON *BACILLUS LICHENIFORMIS* AND VARYING SPECIES**", submitted by **Ms. BRINDA P (Reg.no: S2014414)**, in partial fulfilment of the requirements for the **DEGREE OF BACHELOR OF SCIENCE IN GENETICS AND BIOTECHNOLOGY** to Bangalore City University is based on the work carried out by him under my guidance and supervision during the year 2020-2023.

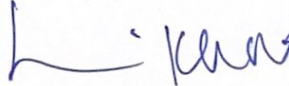


Dr. Ramakrishnaiah T.N

Professor and Guide

Department of Genetics and Biotechnology

M.S.R.C.A.S.C, Bangalore




Dr. Lakshmi Kant R N

Head of the Department

Department of Genetics and Biotechnology

M.S.R.C.A.S.C, Bangalore

Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce



Dr. Pavithra Kumari H G

Assistant Professor,

Department of Genetics and Biotechnology

M.S.R.C.A.S.C, Bangalore

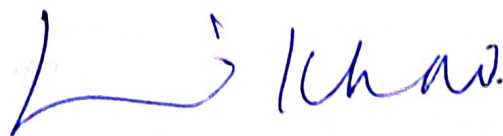
DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that the dissertation entitled, "**BIOINFORMATIC TOOLS USED TO ANALYSE THE EFFECT OF SEROTONIN ON THE CIRCADIAN RHYTHM OF DROSOPHILA**" submitted by **Ms Fathima Afrin, Ms Aishwarya Rajesh Menon, Ms Ashwathy K H** to Bengaluru City University in partial fulfilment of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and Biochemistry) is based on the work carried out by him under our guidance and supervision during the year 2022-2023.

Dr. Ramakrishnaiah T. N.

Assistant Professor



Dr. Lakshmikanth R N

Professor and Head of the Department

**Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce**

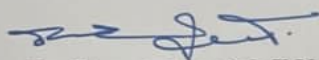


Dr. Pavithra Kumari

Assistant Professor

CERTIFICATE

This is to certify that this dissertation entitled, "**BIOINFORMATICS TECHNIQUES USED TO ANALYSE MOLECULAR VARIATION AND CONSTRUCT PHYLOGENETIC TREE ON *BACILLUS LICHENIFORMIS* AND VARYING SPECIES**", submitted by **Ms. LAVANYA B R (Reg.no: S2014426)**, in partial fulfilment of the requirements for the **DEGREE OF BACHELOR OF SCIENCE IN GENETICS AND BIOTECHNOLOGY** to Bangalore City University is based on the work carried out by him under my guidance and supervision during the year 2020-2023.

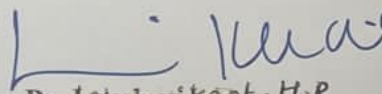


Dr. Ramakrishnaiah T.N

Professor and Guide

Department of Genetics and Biotechnology

M.S.R.C.A.S.C, Bangalore



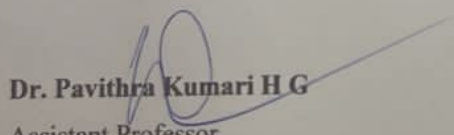
Dr. Lakshmi Kant H.R

Head of the Department

Department of Genetics and Biotechnology

M.S.R.C.A.S.C, Bangalore

**Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce**



Dr. Pavithra Kumari H G

Assistant Professor,

Department of Genetics and Biotechnology

M.S.R.C.A.S.C, Bangalore



M S Ramaiah College of Arts, Science and Commerce

Re-accredited 'A' by NAAC, Permanently Affiliated to Bengaluru City University,
Approved by Government of Karnataka, Approved by AICTE, New Delhi,
Recognized by UGC under 2f & 12B of UGC act 1956



(National Institutional Ranking Framework, Ministry of Education, Govt of India)
Ranked 55th in NIRF India Ranking by MHRD, New DELHI
DBT Star College Scheme

M. S. RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE

MSR Nagar, MSRIT Post, Bengaluru-560054

DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

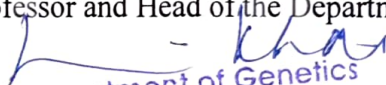
This is to certify that the dissertation entitled, "SEQUENTIAL ANALYSIS OF OVARIAN CANCER GENE USING BIOINFORMATICS" submitted by Likhitha S (S2014427), Priyadharshini D (S2014439), Shruthi Rudra Murthy (S2014446) to Bengaluru City University in partial fulfilment of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and Biochemistry) is based on the work carried out by her under our guidance and supervision during the year 2022-2023


Dr. Ramakrishnaiah T.N

Assistant Professor

Dr. Lakshmikanth R.N

Professor and Head of the Department


Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce


Dr. Pavithra Kumari H G

Assistant Professor



RAMAIAH
College of Arts, Science &
Commerce

ಎಮ್ ಎಸ್ ರಾಮಯ್ಯ ಕಲಾ, ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಕಾಲೇಜು
M S Ramalah College of Arts, Science and Commerce

Re-accredited 'A' by NAAC, Permanently Affiliated to Bengaluru City University,
Approved by Government of Karnataka, Approved by AICTE, New Delhi,
Recognized by UGC under 2f & 12b of UGC act 1956



(National Institutional Ranking Framework, Ministry of Education, Govt of India)
Ranked 55th in NIRF India Ranking by MHRD, New Delhi
DBT Star College Scheme

M.S. RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE

MSR Nagar, MSRIT Post, Bengaluru- 560 054.

DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that the dissertation entitled "BIOINFORMATICS TECHNIQUES USED TO ANALYSE SEQUENTIAL VARIATION OF SODIUM-DEPENDANT SEROTONIN TRANSPORTER IN FIVE DIFFERENT ORGANISMS" submitted by, **Meenakshi Anoop (S2014428)**, **Pooja C (S2014434)**, **Tarunika Muppala (S2014453)**, and **Yashoda O (S2014457)** to Bengaluru City University in Partial fulfillment of the requirements for the degree of **Bachelor of Science (Genetics, Microbiology, and Biochemistry)** is based on the work carried out by them under our guidance and supervision during the year 2022-2023.

Dr. Ramakrishnaiah T.N.

Assistant professor

Dr. Lakshmi Kanth

Professor and Head of the Department

Dr. Pavithra Kumari H.G.

Assistant professor

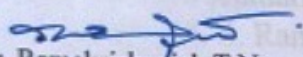
Department of Genetics
M.S. Ramalah College of
Arts, Science & Commerce



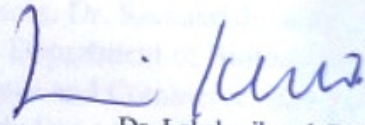
DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that the dissertation entitled, " **ANALYSIS OF MOLECULAR VARIANCE OF P53 GENE IN FIVE MODEL ORGANISMS**" submitted by Ms. Aishwarya Ajith Kumar Nambiar (S2014405), Ms.Akshatha K (S2014408), Ms. Ashmitha S (S2014408),Ms.Dhathri V Murali (S2014416), Ms Dwithi A Bhandarkar (S2014418) to Bengaluru city university in partial fulfillment of the requirements for the degree of Bachelor of Sciences (Genetics, Microbiology and Biochemistry) is based on the work carried out by her under our guidance and supervision during the year 2022-2023.


Dr. Ramakrishnaiah T.N.

Assistant Professor



Dr. Lakshmikanth R.N

Professor and Head of the Department

Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce


Dr. Pavitra Kumari H G

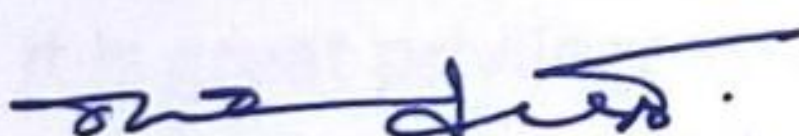
Assistant Professor

**M.S. RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE MSR
Nagar, MSRIT Post, Bengaluru-560 054**

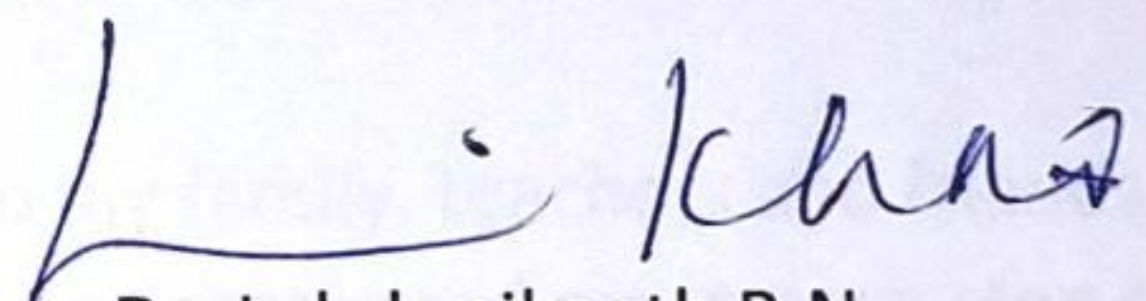
DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that the dissertation entitled "**DEVELOPMENTAL TOXICITY IN *Danio rerio*: ETHANOL AND ACETALDEHYDE EFFECTS AND MOLECULAR VARIATION OF HBB PROTEIN IN RELATED SPECIES**", submitted by **ABHISIKTA BOSE (S2014403)**, **DEBLINA TARAFDER (S2014415)**, **DIVYA SHIVAKUMAR (S2014417)** to Bengaluru City University in partial fulfillment of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and Biochemistry) is based on the work carried out by him under our guidance and supervision during the year 2022-2023.

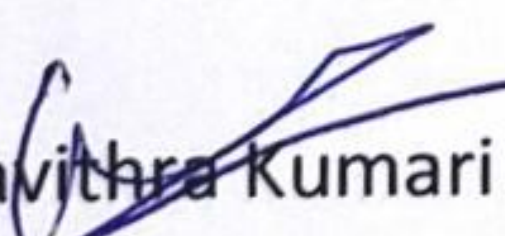

Dr. Ramakrishnaiah T. N.

Assistant Professor


Dr. Lakshmikanth R.N.

Professor and Head of the Department

Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce


Dr. Pavithra Kumari

Assistant Professor

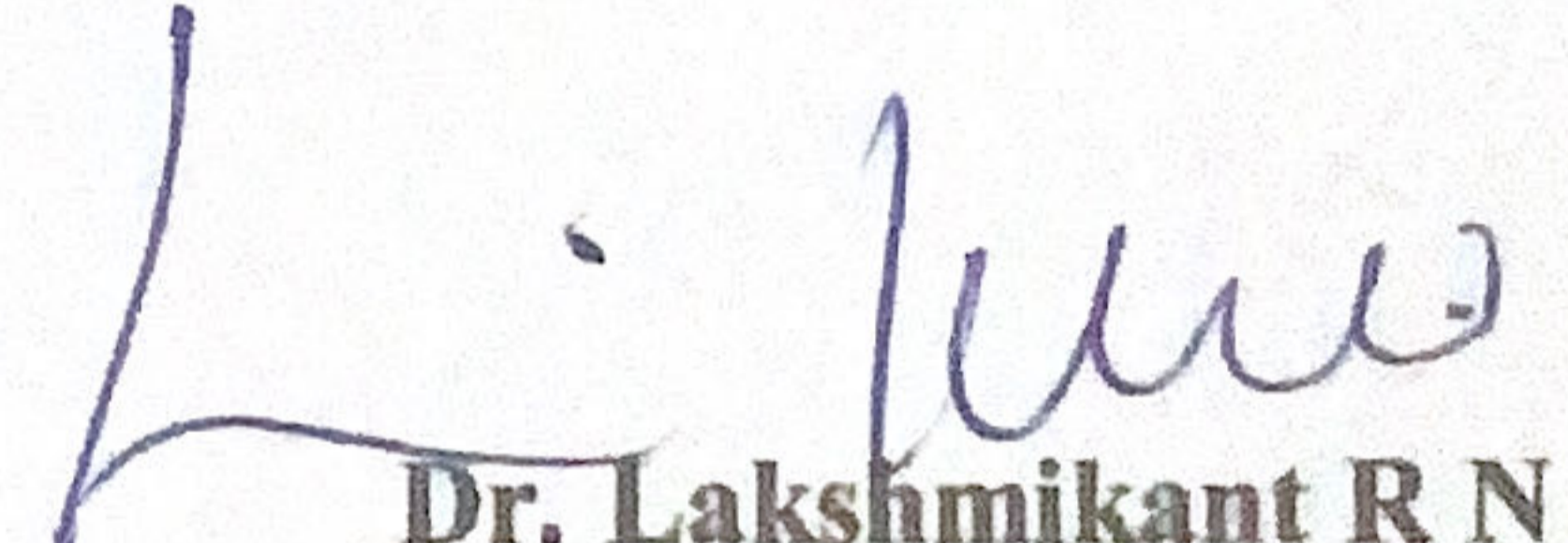
DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that the dissertation entitled, “**PHYLOGENETIC ANALYSIS OF ALPHA – SYNUCLEIN GENE RESPONSIBLE FOR PARKINSON’S DISEASE IN DIFFERENT ORGANISMS**” submitted by **Ms. Kshiti Joshi, Mr. Aashish A Chinchure, Mr. Adhitya A K and Mr. K Sharath** to Bengaluru City University in partial fulfilment of the requirements for the degree of Bachelor of Science(Genetics, Microbiology and Biochemistry) is based on the work carried out by him under our guidance and supervision during the year 2021-2022.



Dr. Ramakrishnaiah T. N.

Assistant Professor


Dr. Lakshmikant R N

Professor and Head of the Department

Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce


Dr. Pavithra Kumari
Assistant Professor

M.S. RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE MSR
Nagar, MSRIT Post, Bengaluru-560 054

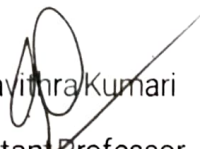
DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

CERTIFICATE

This is to certify that the dissertation entitled " **DEVELOPMENTAL TOXICITY IN *Danio rerio*:
ETHANOL AND ACETALDEHYDE EFFECTS AND MOLECULAR VARIATION OF HBB PROTEIN
IN RELATED SPECIES** ", submitted by **EASHAROY(S2014419) and BIDIPTA
BANERJEE(S2014413)** to Bengaluru City University in partial fulfillment
of the requirements for the degree of Bachelor of Science (Genetics, Microbiology and
Biochemistry) is based on the work carried out by him under our guidance and
supervision during the year 2022-2023.


Dr. Ramakrishnaiah T. N.

Assistant Professor


Dr. Pavithra Kumari
Assistant Professor



Dr. Lakshmikanth R. N.

Professor and Head of the
Department

Department of Genetics
M.S. Ramaiah College of
Arts, Science & Commerce