

**SWAMI VIVEKANANDA INSTITUTE  
OF  
MODERN SCIENCE**



Affiliated to Maulana Abul Kalam Azad University of Technology, WB  
Sonarpur Station Road, Karbala, P.O. - Narendrapur, P.S. - Sonarpur, Kolkata-700103

---

**TO WHOM IT MAY CONCERN**

*This is to certify that the project entitled "Studying apoptotic effect of novel purified metalloprotease on human colon cancer cells" with reference to Swami Vivekananda Institute of Modern Science, Sonarpur, Kolkata-700103 is submitted by Subhankar Roy [2<sup>nd</sup> year, 2<sup>nd</sup> semester, registration no. 212641899210018 year 2021-22, roll no. 26499221015] under the Department of Biotechnology for the partial fulfilment of the degree of M.Sc Biotechnology, under Maulana Abul Kalam Azad University of Technology, WB, embodies the work has been done by him under our supervision.*

*Gupta*

.....  
**Prof. Gargi Gupta**  
(Vice-Principal)  
SVIMS

*Indip Sheet*

.....  
**Prof. (Dr.) Indip Sheet**  
(Internal Project Guide)  
Department of Biotechnology  
SVIMS

*Nath*

.....  
**Prof. (Dr.) Nilanjana Bhattacharyya Nath**  
(Head of the Department)  
Department of Biotechnology  
SVIMS

Date:

Place: Kolkata



**icmr**  
INDIAN COUNCIL OF  
MEDICAL RESEARCH

**NICED**  
NATIONAL INSTITUTE OF  
CHOLERA AND ENTERIC DISEASES

आई. सी. एम. आर. - राष्ट्रीय कॉलरा और आंत्र रोग संस्थान  
ICMR - NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES  
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार कल्याण मंत्रालय, भारत सरकार  
Department of Health Research, Ministry of Health and Family Welfare, Govt. of India

WHO COLLABORATING CENTRE FOR RESEARCH AND TRAINING ON DIARRHOEAL DISEASES

May 25, 2023

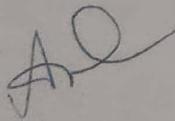
## CERTIFICATE

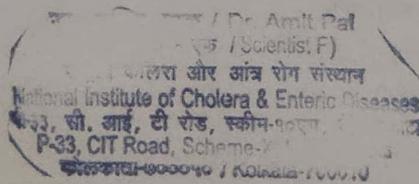
### To Whom It May Concern

This is to certify that the project report entitled "Studying the Apoptotic Effects of a Novel Purified Microbial Metallo-protease on Human Colon Cancer Cells" has been submitted by **Mr. Shubhankar Roy**, Reg. no: **212641899210018** of **2021-22** of the Department of Biotechnology, for the degree of Master of Science in Biotechnology from Swami Vivekananda Institute of Modern Science affiliated to MAKAUT, WB. The research work was carried out by him in the Division of Molecular Pathophysiology, ICMR-NICED, under my supervision from **January 05, 2023** to **March 15, 2023**. The results embodied in this report are new and have not been submitted to any other university or institution for the award of any degree or diploma.

He has successfully completed the project work and has been acquainted with several biochemical, molecular biology and cell biology techniques like human cell culture maintenance, flow cytometry, microbial culture methods, enzymatic assays and protein purification by chromatographic methods etc. His performance during this period has been highly satisfactory. He is sincere, responsible and efficient in his working field. I have had the best impression about him scientific enthusiasm and technical background.

I wish him all success in his future endeavours.

  
**Dr. Amit Pal, Ph.D.**  
**Scientist-'G' & Head**  
**Division of Molecular Pathophysiology**  
**ICMR-NICED**  
**Beliaghata, Kolkata-700010**  
**Contact: Mob: +91-9831361740**  
**Email: apal7364@rediffmail.com**



पी-३३, सी.आई.टी. रोड, स्किम - १०एम, बेलियाघाटा, कोलकाता - ७०००१०, भारत  
P-33, C.I.T. Road, Scheme - XM, Beliaghata, Kolkata - 700010, India  
निदेशक / Director : 91-33-2363 3373, 2370 1176, पि.बि.एक्स / PBX : 91-33-2353 7469 / 7470, 2370 5533 / 4478 / 0448  
फैक्स / Fax : 91-33-2363 2398, 2370-5066, वेब / Website : www.niced.org.in

