## REPORT

## Report on participation of the ICMR International Fellow (ICMR-IF) in Training/ Research abroad.

1. Name and designation of ICMR-IF

Dr. Sharmistha Dey,

Associate Professor

2. Address

Department of Biophysics

AIIMS, New Delhi

3. Frontline area of research in which training/ research was carried out

Translational research in cancer

4. Name & address of Professor and host institute Dr. Nandini Dey

Senior Scientist & Director, Translational Laboratory

Department of Molecular & Experimental Medicine

Avera Center for Precision Oncology, Avera Cancer Institute, Sioux Falls

South Dakota, USA

5. Duration of fellowship

2 weeks

- Highlights of work conducted:
- 6.1 Technique/expertise acquired
  - 6.1.1 Translational research on cancer
  - 6.1.2 Mechanistic role of recent drugs used for breast cancer in USA
  - 6.1.3 Role of the combination of drugs on genetic mutation in breast cancer
  - 6.1.4 Role of combination of drugs in hypoxia in breast cancer cell lines
  - 6.1.5 Role of drugs on migration of cell lines resistance to drugs
  - 6.1.6 Application of drugs on the basis of genomic study on patients sample
  - 6.1.7 Inhibition assay of Rac1 by combination of HER2 targeted drugs on ER+ve and ER-ve breast cancer cell lines
- 6.2 /Research results, including any papers, prepared/submitted for publication: Some results were obtained. Time was too short for any publication.
- 6.3 Proposed utilization of the experience in India

I have expertise in design and synthesis of peptide as therapeutic target of different biologically active proteins having role in genesis of various cancers including breast cancer. I have published several papers in high quality international journals on cancer. This fellowship was meant to gain insight into new areas of cutting edge research in breast cancer with specific reference to translational research.

The techniques which I have learned during this fellowship will help to investigate actual mechanistic role of modulators (synthetic and natural inhibitors and activators), which will give a clear picture of the pathway involved. From this knowledge it will be possible to develop more modulators to target molecules in the pathway in more specific ways. This will help to use combination as well as synergistic drugs to get efficient anti-cancer effect.

This will be of value in translating our basic research in a rational way to clinical practice. I am planning to write a project on genomic study of breast cancer and targeting specific pathway for therapeutic application.

Signature of ICMR-IF

ICMR Sanction No. INDO/FRC/452/S-07/2018-19-IHD