

# Certificate

I certify that Ms. Indrani Sarkar has prepared the thesis entitled - "Bioinformatic characterization of selected Actinobacteria with a focus on biotopic diversity", for the award of PhD degree from the University of North Bengal, under my guidance. She has carried out the work at Bioinformatics Facility (funded by DBT, Govt. of India), Department of Botany, University of North Bengal. I may further declare that the results incorporated in this thesis have not been submitted for any other degree elsewhere.



[Prof. Arnab Sen]  
Supervisor  
Department of Botany  
University of North Bengal

Date 4/2/2019

**Dr. ARNAB SEN**  
Associate Professor in Botany  
University of North Bengal

## Urkund Analysis Result

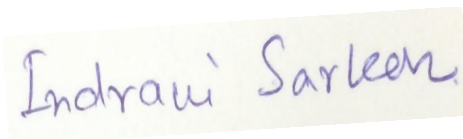
Analysed Document:           Indrani Sarkar\_Botany.pdf (D46664634)  
Submitted:                    1/11/2019 11:01:00 AM  
Submitted By:                nbuplg@gmail.com  
Significance:                 1 %

### Sources included in the report:

<https://images.nature.com/original/nature-assets/ismej/journal/v11/n6/extref/ismej2016198x2.pdf>  
<http://enve-omics.ce.gatech.edu/ani/>

### Instances where selected sources appear:

2



**Dr. ARNAB SEN**  
Associate Professor in Botany  
University of North Bengal

*In the absence of any other proof, the thumb alone would convince me  
of God's existence.*

*-Sir Isaac Newton*