



Department of Bio & Nano Technology  
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(Established by State Legislature Act 17 of 1995, A-Grade NAAC Accredited University)

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## CERTIFICATE - I

This is to certify that the work embodied in the Thesis entitled “**Shikonin: Comparative Study of Signaling Pathways in Multiple Therapeutic Areas**” is an original work and has been carried out by **Ms. Bhawana Gupta (Registration No-12099003)** in the Department of Bio & Nano Technology, Guru Jambheshwar University of Science & Technology, Hisar, Haryana and TCG Life Sciences, Kolkata, West Bengal for the award of degree of **Doctor of Philosophy in Biotechnology** under my Guidance and Research Supervision and has not been submitted, in part or full, for the award of any other degree or diploma to this or any other University.

**Prof. Ashok Chaudhury**

(Research Supervisor)



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## CERTIFICATE - II

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