

**Prevalence of diabetes in East Gujarat and Effect of  
Hypoglycaemia on ErbB 3 Receptor Expression in  
Hypothalamus of Diabetic rats**

**A dissertation project**

**Submitted to**

**Nirma University**

**In Partial fulfilment of Requirement for the**

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**Biotechnology/Biochemistry**



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## CERTIFICATE

This is to certify that the thesis entitled “**Prevalence of East Gujarat and Effect of Hypoglycemia on ErbB 3 Receptor Expression in Hypothalamus of Diabetic rats**” submitted to the Institute of Science, Nirma University in partial fulfillment of the requirement for the award of the degree of MSc. In Biotechnology/Biochemistry, is a record of research work carried out by **Divya Mehta (14MBT013), Rashmikaben Nisarta (14MBT016) & Charmi Vyas (14MBC001)** under the guidance of **Dr. Ameer K. Nair**. No part of the thesis has been submitted for any other degree or diploma.

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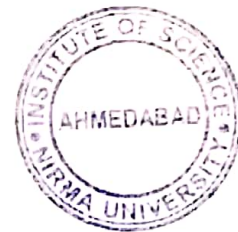
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## Abstract

Diabetes has become a cause of increasing health concern. The International Diabetes Federation estimations indicated more than 371 million people living with Diabetes globally and of which 63 million diabetics reside in India. The expected figure by 2030, is 552 million, if no urgent action is taken. There is no true picture available about prevalence of Diabetes Mellitus in Gujarat. No zone wise study has been done to know diabetes prevalence. Based on geographic profile, life style and food pattern we have selected east Gujarat for demographic survey. From east Gujarat Dahod, Mahisagar, Aravalli were selected for demographic survey of diabetes. We have found 7.77% diabetic in Dahod, 6.75% in Aravalli, and 4.67% in Mahisagar. Apart from this prevalence of diabetic complications, role of anthropometric factors, food pattern, sociodemographic factors were studied. Hypoglycemia is well know complication of diabetes mellitus. It is a side effect of insulin therapy which affects central and peripheral nervous system dysfunction. A single intrafemoral dose of Streptozotocin was administered to induce diabetes. Hypoglycemia was induced by appropriate doses of insulin subcutaneously in control and diabetic rats. To evaluate motor function in inclined beam and wire grip test was done. Motor function was impaired during hyperglycaemic condition and worsen during hypoglycaemic condition. Gene expression of ErbB 3 receptor showed that ErbB 3 gets down regulated during diabetic and hypoglycaemic condition in hypothalamus. Since experiment was done only once, this study need to be repeated.