

CHAPTER 5

BIOPHYSICS

Doctoral Thesis

035. BANERJEE (Jyotirmoy)
Biophysical and Electrophysiological Studies of Ion Channels Involved in Brain Cell Death.
Supervisor : Prof. Subhendu Ghosh
Th 14697

Abstract

The investigation gives an insight into the mechanism of cytochrome c mediated cell death. It explains the role of VDAC, Bax, tBid and plasminogen in the apoptotic machinery and how phosphorylation of VDAC by PKA could be a mechanism for regulation of cytochrome c mediated cell death. Also noise analysis, fractal analysis and relaxation analysis was used to study the gating dynamics of VDAC.

Contents

1. Introduction. 2. Aims and objectives. 3. Review of literature on the role of voltage dependent anion channel (VDAC), Bax and Bid in cell death. 4. Investigating role of rat brain VDAC, Bax and Bid in cell death. 5. Review of literature on regulation of VDAC-Bax-tBid mediated cell death. 6. Investigating regulation of VDAC-Bax-tBid mediated cell death by phosphorylation. 7. Interaction of plasminogen with rat brain VDAC: A possible mechanism of cell death. 8. Gating dynamics of VDAC. 9. Conclusion. Future prospects and Bibliography.