3.1 Aims and Objectives

This study has following aims and objectives:

1. To validate time dependent and age dependent existence of cognition deficit in chronic animal models of epilepsy resembling to clinical epilepsy

2. To investigate neurochemical mechanisms underlying the induction of cognition deficit in epilepsy by monitoring the biochemical changes in brain of epileptic animals in above validated models

3. To explore the modulation of underlying neurochemical interactions to reveal common target for comprehensive treatment of epilepsy with restoration of cognition

3.2 Plan of Work

Aim 1: To validate time dependent and age dependent existence of cognition deficit in chronic animal models of epilepsy resembling to clinical epilepsy

This aim was achieved with the help of following experiment:

Experiment I
Validation of time and age dependent existence of cognition deficit in chronic animal models of epilepsy resembling to clinical epilepsy

Aim 2: To investigate neurochemical mechanisms underlying the induction of cognition deficit in epilepsy by monitoring the biochemical changes in brain of epileptic animals in above validated models

This aim was achieved with the help of following experiments:

Experiment II
Investigation of neurochemical mechanisms underlying the induction of cognition deficit in epilepsy by monitoring the neurochemical changes in brain of postictal and interictal animals

Experiment III
Comparative analysis of phenytoin and valproate in epilepsy associated learning and memory deficit and associated neurochemical changes
Aim 3: To explore the modulation of underlying neurochemical interactions to reveal common target for comprehensive treatment of epilepsy with restoration of cognition

This aim was achieved with the help of following experiments:

**Experiment IV**

Adjuvant anticholinesterase therapy for the management of epilepsy induced memory deficit

**Experiment V**

Ameliorative role of selective serotonin receptor modulation in epilepsy and associated learning and memory deficit