Neurotoxicological evaluation of some selected plants from Manipur, India and its association with N-methyl-D-aspartate (NMDA) receptor antagonist

CHAPTER-3

STUDY AREA
Study Area-Manipur

Manipur, one of the easternmost border states (22,327 km² geographical area) of India lies at latitude of 23°83' to 25°68' N and longitude of 93°03' to 94°78' E. It is situated at an altitude of 790 meter and its capital city is Imphal. Of the total area, about nine-tenths constitute the hills which surrounds the remaining one-tenth valley. It is bounded on the north by the state of Nagaland, on the east by the upper Myanmar (Burma), on the south by the Chin Hills of Myanmar and the state of Mizoram and on the west by Cachar district of Assam. Manipur is characterized into two distinct physical regions-an outlaying area of rugged hills and narrow valleys and the inner area of flat plains with all associated land forms. The central bowl-shaped valley comprises about 10% (2238 sq km) of the state geographical area covers 4 districts (Imphal East, Imphal West, Thoubal and Bishnupur). The remaining 90% (20089 sq km) of the area covers 5 hill districts (Ukhrul, Senapati, Churchandpur, Tamenglong and Chandel. The climate of Manipur varies from tropical to sub alpine. The soil cover can be divided into two broad types, viz. the red ferrogenous soil in the hill area and the alluvium in the valley. The state has rich diversity of plants with ethnobotanical and economic importance. It is very rich in flora and fauna, being the core zone of Indo-Burma biodiversity Hotspot (Singh, 2009). The vegetation consists of a large variety of plants ranging from short and tall grasses, reeds and bamboos to trees of various species.
Plate 1: Map of Manipur showing the site of plants collection