3. SCOPE OF THE WORK

_Cryptococcus neoformans_ spp. complex is an opportunistic yeast causing fatal meningitis in patients who may or may not have other predisposing factors. The incidence of infection by this encapsulated yeast is on the rise with the increased incidence of immuno suppressed patients. The pathogenic yeast is distinguishable into four serotypes A, D, B and C. The majority of isolates obtained from human samples were either Serotype A or D while B and C serotypes were rarely reported (Banerjee _et al._, 2004). Diagnosis and correct identification of the yeast in clinical specimens include culture at 25°C and 37°C, microscopy, biochemical tests such as phenoloxidase production, creatinine utilization, glycine utilization (Bennett _et al._, 1978), proline utilization (Dufait _et al._, 1987), sugar fermentation, urease production (Christensen, 1946), Nitrate reductase activity (Rhodes _et al._, 1974), serological detection using Latex agglutination test, Enzyme Immunoassay (EIA; Saha _et al._, 2008) and confirmatory tests using PCR of specific genes (Rappelli, _et al._, 1998; Paschoal, _et al._, 2004) of the pathogen.

Several studies using or assessing the utility of these various assays have reported the accuracy of these tests but when used for clinical samples sensitivity and selectivity of these tests varied. Brief reports from southern India merely reported the incidence of a few clinical cases while one thesis submitted to the University of Madras (Balasubramaian, 1999) studied the incidence of this disease in HIV patients using the CRAG test.

The present study was designed to document the incidence of Cryptococcosis in clinically diagnosed cases of chronic meningitis in immunocompromised patients visiting a tertiary hospital in North Chennai, Tamil Nadu, India. Confirmatory diagnosis, typing, laboratory findings, PCR and
Fourier Transform Infrared Spectroscopy (FTIR) were used to study the incidence of this disease. The scope and objectives of this study are:

1. Isolation of *Cryptococcus* from Clinical and Environmental samples
2. Collection of sample from patients & data analysis
3. Identification & Characterisation
4. Immuno- diagnosis by SDS-PAGE, Immunoblotting
5. Diagnostic tests based on PCR & FT-IR
6. Antifungal susceptibility testing

Antifungal activity of Extracts from *Swietenia mahagoni*