

Neuroprotective, anti-inflammatory and immunomodulatory activities of *Ozoroa pulcherrima* and *Sida pilosa* extracts on murine model of neuroschistosomiasis

Ulrich Femoe Membe

University of Yaoundé, Cameroon

Schistosomiasis (bilharziasis) is an infectious parasitic disease caused by blood flukes of the genus *Schistosoma*. Schistosomiasis is an important public health problem in Africa. After malaria, it is the second most prevalent tropical disease, affecting at least 258 million people worldwide and 90% in Africa (WHO, 2017). The eggs released by the adult female worm are mainly responsible to the pathology where they are deposited in the liver, intestine, uro-genital or Central nervous system (CNS). The most severe clinical outcome associated with this parasite is the infection of the central nervous system (CNS) known as neuroschistosomiasis (NSM) and can affect the brain or the spinal cord occurring during all phases of schistosomiasis and resulting to severe complications. Chronic neuroschistosomiasis results from the host's immune response to the eggs and

the resultant granulomatous reaction and fibro-obstructive disease. Once deposited into CNS, the mature embryo secretes immunogenic substances that causing inflammatory reaction leading to a periovular granulomatous reaction. In the early phase of schistosomiasis (the first 110 days) the immune response reaches maximum intensity (Pittella, 1997; Ferrari, 2008). The granulomas successfully destroy the ova but result in fibrotic deposition in the host tissue. The mass effect of thousands of eggs and the large granulomas concentrated within the brain or spinal cord leads to symptoms such as headache, focal or generalized seizures, ataxia, nystagmus, nausea and vomiting, intracranial hypertension and neurological deficit.

e: ulrichfemoe10@gmail.com



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