# *CASSIA SIAMEA* LAM EXTRACTS ANALGESIC MECHANISM OF ACTION AND PHARMACODYNAMIC INTERACTION WITH PARACETAMOL (ACETAMINOPHEN)

**G.F. Nsonde Ntandou[a,b,d], D.J. Bassoueka[a,b], J.T. Banzouzi[b,c],R.D.G. Elion Itou [a], A.W. Etou Ossibi [a],F. Benoit-Vical [e,f], J.M. Ouamba[g] , A.A. Abena[d]**

[a] Laboratoire de Biochimie et Pharmacologie, Faculté des Sciences de la Santé, Université Marien NGOUABI, Brazzaville, B.P. 69, **CONGO**
[b] Centre d'Etude et de Recherche Médecins d'Afrique (CERMA), B.P. 45, Brazzaville, **CONGO**
[c] Institut de Chimie des Substances Naturelles (CNRS), 1 Avenue de la Terrasse-Bat 27, 91198 Gif-sur-Yvette Cedex, **FRANCE**
[d] Laboratoire de Physiologie et Physiopathologie Animales, Faculté des Sciences et Techniques, Université Marien NGOUABI, B.P. 69, Brazzaville, **CONGO**
[f] Laboratoire de Chimie de Coordination (CNRS), 205 Route de Narbonne, 31077 Toulouse Cedex 4, **FRANCE**
[g] Unité de Chimie du Végétal et de la Vie, Faculté des Sciences, Université Marien NGOUABI, Brazzaville, B.P. 69, **CONGO**

**Corresponding Author: Dr Nsonde Ntandou Gelase Fredy, PhD**
**Corresponding Author's Institution**: Laboratoire de Biochimie et Pharmacologie Faculté des Sciences de la Santé, Université Marien Ngouabi de Brazzaville, **RÉPUBLIQUE DU CONGO**
BP : 69 Brazzaville, **CONGO**, **Email:** nsonde_ntandou@yahoo.fr

## ABSTRACT

Investigation of analgesic activity with oral administration of ethanol (CSE3) and aqueous (CES4) *Cassia siamea* extracts showed a dose-dependent profile similar with morphine in albinos Wistar rats. And ip injection of 1ml/kg of naloxone, a specific antagonist of morphine, 45 min after oral administration of extracts at the effective dose of 200 mg/kg completely reversed the analgesic effect. However, *C. siamea* extracts did not reverse Brewer'yeast-induced hyperthermia. The therapeutic combination of paracetamol with CSE3 or CSE4 extract, at doses of 8/15, 17/33 and 50/100 mg/kg p.o. (order: paracetamol/extract) exhibited significant and dose-dependent analgesic effect, higher than the effect observed with each product used alone at high dose. Pain was totally suppressed up to the limit fixed for experimental with association at dose (50/100) mg/kg. These observations indicate that *C. siamea* extracts do not target the cyclo-oxygenases of cerebral tissue as paracetamol do, but act through the CNS β mu opioid receptors as morphine. The synergic action of the extracts with paracetamol can be explained by a potentiation of the analgesic effect of these two drugs active each on a different target.

**Keywords:** Analgesic, *Cassia siamea*, mechanism, paracetamol, potentiation.