

Seed extract of *Moringa oleifera* has antioxidant action in pregnant rats treated with lipopolysaccharide

Veras, A.C.C.¹; Aires, R.S.¹; Farias, J.S.¹; Pimentel, J.H.M¹; Cabral, E.V¹; Silva-Filho, L. F.¹; Coelho, L.C.B.B.²; Napoleão, T.H.²; Vieira-Filho, L.D.¹; Paiva, P.M.G.²; Paixão, A.D.O.¹

¹Departamento de Fisiologia e Farmacologia, Centro de Ciências Biológicas, Universidade Federal de Pernambuco, Recife- PE, Brazil. ²Departamento de Bioquímica, Centro de Ciências Biológicas, Universidade Federal de Pernambuco, Recife-PE, Brazil.

INTRODUCTION: The anti-oxidant effect of *Moringa oleifera* tissues has been experimentally demonstrated *in vitro*, but not *in vivo*. Elevated levels of reactive oxygen species (ROS) during pregnancy may affect fetal development. Maternal treatment with lipopolysaccharide (LPS) produces inflammatory signals, including increased ROS levels. **AIMS:** To investigate the anti-oxidant effect of the aqueous extract from *M. oleifera* seeds on maternal and fetal organs. **METHODS:** The protocol was approved by the Ethics Committee on Animal Experimentation from UFPE (23076.009437/2015-15). Wistar female rats were mated at age of 90 days. Pregnant rats were randomly assigned to be treated with: saline (0.5 mL/kg, sc, 4 times from 13th day of pregnancy) and distilled water, the extract vehicle (V, 1 mL/kg, po), for the control vehicle group (CV, n=8); LPS (0,5 mg/kg, sc, 4 times from 13th day of pregnancy) and distilled water, for the LV group (n=6); LPS and the extract (E, 200 mg/kg, po, 7 times from 13th day of pregnancy), for the LE group (n=8). Pregnancy was interrupted at the 20th day to withdraw placentas, maternal and fetal livers, and fetal kidneys. ROS were measured by assessing the levels of malondialdehyde (MDA), reduced glutathione (GSH) and superoxide anion (O₂⁻). Statistical analysis was performed using one-way ANOVA followed by Student-Newman-Keuls test with significance at $P < 0.05$. **RESULTS:** The LV group presented higher MDA levels than the CV group in placentas and maternal and fetal livers. Levels of O₂⁻ were also higher in placentas and fetal kidneys in the LV group than in the CV group. In contrast, in the LE group, both MDA and O₂⁻ levels were similar to that of CV. GSH levels were not modified by treatments. **CONCLUSION:** These findings show that the aqueous extract from *M. oleifera* seeds has anti-oxidant action *in vivo*, which may affect fetal development.

Keywords: *Moringa oleifera*, oxidative stress, fetal development.

Financial Support: FACEPE, CNPq, CAPES and UFPE.