Aceng Ruyani et al., Nat Prod Chem Res 2014, 2:5
http://dx.doi.org/10.4172/2329-6836.S1.005

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Pharmacognosy, Phytochemistry & Natural Products
August 25-27, 2014 DoubleTree by Hilton Beijing, China

Potential of leaf ethanolic extract honje (*Etlingera hemesphaerica*) to recover testes and sperm quality in mice (*Mus musculus*) as the effects of mercuric chloride ($HgCl_2$) toxicity

Aceng Ruyani, Agus Sundaryono, Dinisari Muthma'innah, Melly Br Sumatupang and **Abas**
Bengkulu University, Indonesia

Introduction: This research was aimed to study the potential of leaf ethanolic extract *Etlingera hemisphaerica* to recover testes and sperm quality in *Mus musculus* as the effects of mercury chloride ($HgCl_2$) toxicity.

Methods: Po, P1, P2, P3, and P4 group each consisting of 5 mice as first test animals were used. In day-1, P1, P2, P3, and P4 were given $HgCl_2$, 5 mg/kg body weight (bw) by gavage, and then in days-3, 5, and 7, once a day, P2, P3, and P4 were administered extract 0.13, 0.26, and 0.39 mg/g bw by gavage respectively, meanwhile Po as the control received only the solvent. In day-16, the first test animals were killed by cervical dislocation, and dissected to determine weight, length, and width of the testes. Qo, Q1, and Q3 group each consisting of 15 mice as second test animals. In day-1, Q1 and Q2 were injected intraperitoneally $HgCl_2$ 5 mg/kg bw, then in day-3, Q2 was administrated extract 0.39 mg/kg bw by gavage, meanwhile Qo as the control received only the solvent. In day-6, the second test animals were killed by cervical dislocation, dissected, and generated suspension from the epididymis to determine sperm quality.

Results: $HgCl_2$ treatment on P1 increased weight, length, and width of the testes compared to Po, while $HgCl_2$ treatment which was followed by extract administration three times on P2, P3, and P4 tended to restore testes similar to the Po. Extract 0.39 mg/kg bw on P4 was the most effective to recover testicular conditions. $HgCl_2$ treatment decreased sperm concentration on Q1 ($7.93x10^3$/mL) compared to Qo ($15.66x10^3$/mL). While $HgCl_2$ treatment which was followed by extract 0.39 mg/kg bw administration on P2 ($11.16x10^3$/mL) was lower than on Q1 and state approach Qo. Sperm moves fast and straight in Qo was 30.63%, Q1 was 16.12%, and Q2 was 27.62%, these facts indicated that extract 0.39 mg/kg bw could recover sperm motility due to $HgCl_2$ toxicity.

Conclusion: Leaf ethanolic extract *E. hemisphaerica* (0.39 mg/kg bw) is potentially to recover testes and sperm quality as the effects of $HgCl_2$ (5 mg/kg bw) toxicity in *M. musculus*.

Biography

Aceng Ruyani has completed his PhD in developmental biology from Bandung Institute of Technology (ITB). He is the director of Magister Program in Science Education, Faculty of Teacher Training and Education, Bengkulu University, Bengkulu, Indonesia.

ruyani@lycos.com