PD15: Cytogenecity Evaluation of Students from Tahfiz Schools in Selangor

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ABSTRACT

Introduction: There is a lot of evidence that shows spirituality and religiosity approach in life can improve health status. Spirituality and religiosity approach is also largely applied in Tahfiz schools. **Method:** Sectional study was conducted among students of Tahfiz schools and buccal cells were collected to assess the presence of nuclear abnormalities via the formation of micronucleus (MN) and binucleus (BNu) per cell. Statistical analysis was also performed to measure the association between the frequency of micronuclei (MN) and binucleus (BNu) per cell with their lifestyle factors (sleep times, exercise times, and time of use of mobile phones) and demographic data (age, FSIQ, and number of pages al-Quran that memorized). **Results:** It was found that the frequency of BNu per cell was higher for students from non-Tahfiz schools compared to Tahfiz schools. Meanwhile, the frequency of micronucleus (MN) per cell for both types of schools showed a percentage less than 0.01%. However, there was no significant different between the frequencies of micronucleus (MN) and binucleus (BNu) per cell between the two types of school. In addition, correlation analysis showed that there were significant and positive correlation between age and the frequency of MN ($r = 0,377$, $p = 0.025$) for the students from Tahfiz schools. There was also a significant and negative correlation between the number of pages of the Quran memorized with MN frequency ($r = -0.378$, $p = 0.025$) for the students from Tahfiz schools. The same was also observed between lifestyle factors such as exercise time, time of use of mobile phones, sleep time and FSIQ for the students from the Tahfiz schools. **Conclusion:** nuclear abnormalities were not prominent in students from the Tahfiz schools. Factors that contribute to spiritually and religiosity in schools can prevent cytogenetic effect.

PD16: Antimalarial Activity of *Canarium odontophyllum* Leaf Extracts against Erythrocytes Infected with *Plasmodium berghei* NK65

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ABSTRACT

Introduction: Canarium odontophyllum (dabai) belongs to Burseraceae family which bears nutritious fruit native in Sarawak. The leaves from Canarium odontophylum were proven to have antimicrobial activity and antioxidant property due to its terpenoid, tannin, flavonoid and phenolic content. **Method:** The antimalarial activity of methanol, acetone and aqueous extracts from the leaves of Canarium odontophyllum at concentration ranging from 0.00001µg/ml to 100µg/ml was subjected against erythrocytes infected with Plasmodium berghei NK65 using plasmodium lactate dehydrogenase (pLDH) assay and SYBR green 1 fluorescence assay ex-vivo. pLDH assay was used to measure activity of plasmodium lactate towards the detection of P. berghei whereas SYBR green 1 fluorescence assay was to measure inhibition of DNA activity in the parasites. **Results:** Out of the three extracts, the methanol extract showed the lowest IC_{50} values of 0.0004µg/ml from pLDH assay which was 2X stronger detection of P. berghei than chloroquine (0.0011 µg/ml) and 0.002µg/ml from SYBR green 1 fluorescence assay showing more than 10X higher DNA inhibitory activity compared to chloroquine (0.029 µg/ml). The least active extract was found to be acetone extract at IC50 of 0.017µg/ml and 4.371µg/ml, respectively from both assays. The effectiveness of methanol extract was further tested on the three different morphological stages in the life cycle of malaria parasite. The results from pLDH assay showed that the methanol extract from C. *odontophyllum* leaves was more potent against the schizont stage at IC_{50} of1.16×10^{-5}µg/ml despite the stronger effect of chloroquine (IC50 of2.53 X 10-5µg/ml) against the mature trophozoite. On the other hand, SYBR green 1 fluorescence assay demonstrated that the young trophozoite was most affected by both chloroquine and methanol extract at IC_{50} of3219×10^{-5} µg/ml and 195×10^{-5} µg/ml, respectively. **Conclusion:** The methanol extract from the leaves of Canarium odontophyllum showed promising antimalarial activity and has the potential as a schizonticidal agent.