

## Haematological parameters of leukaemic rats supplemented with *Morinda citrifolia*

### ABSTRACT

*Morinda citrifolia* (mengkudu) had been reported to have anti-tumor activity, which has been researched widely in several animal models. Sixty four eight-week-old male Sprague Dawley rats were divided into four groups of 16 rats per group namely control, MNU, *Morinda citrifolia* (MC), and MC+MNU group. The MNU and MC+MNU groups received four consecutive intraperitoneal (i.p) injections of N-methyl-N-nitrosourea (MNU) at a dose of 60 mg/kg for induction of leukaemia. Rats in the MC and MC+MNU groups were fed daily with a ration mixed with *M. citrifolia* at a dose of 5000 mg/kg body weight. The peripheral blood samples were collected at 20 weeks post MNU administration into EDTA tubes and analysed for a complete blood count. Blood smears stained with Wright's stain were prepared for a manual differential leukocyte count and examination of the leukaemic cells. The results were analysed using a one-way ANOVA. Results in this study showed that MNU group had significant lymphocytosis ( $66.9 \pm 98.14$ ) compared to the other groups. The morphology of the lymphocytes in the MNU and MC+MNU groups showed a typical morphology of leukaemic cell, while the other groups had normal lymphocyte morphology. Rats in the MNU group also had anaemia with significant reduction in total erythrocyte number ( $6.11 \pm 2.73 \times 10^{12}/L$ ), haemoglobin concentration ( $131.64 \pm 21.32$  g/L) and packed cell volume ( $37.92 \pm 8.50$  L/L). The erythron parameters of MC+MNU group were comparable to the control and MC groups. In conclusion, daily supplementation of *M. citrifolia* reduced the proliferation of circulating leukaemic cells.

**Keyword:** Leukaemia; Rats; *Morinda citrifolia*