## Documents

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**Cytotoxicity of L- And D-ascorbic acid on murine and human suspension peripheral blood cells [Sitotoksisiti L- dan D-Asid Askorbik ke atas Sel Ampaian Darah Periferi Mencit dan Manusia]**

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**Abstract**
Ascorbic acid has two isoforms, i.e., L-ascorbic acid which exists naturally and D-ascorbic acid which only can be found in synthetic form. This study aimed to determine the cytotoxic effect of L- and D- ascorbic acid on primary cell, i.e. murine and human suspension cells of peripheral blood. Murine and human suspension blood cells were obtained through density gradient centrifugation using Ficoll-Paque™ PLUS. Non-adherent cells were identified after 7 days in culture and seeded at 1 × 105 cells/mL. Both newly isolated primary cells were analyzed for in vitro proliferation ability for 7 days. The cells were treated with L- and D-ascorbic acid at concentrations 30, 50, and 90 µg/mL followed by Trypan blue viability assay at day 0, 3, 7, and 14. Cells cultured in the complete medium were represented as control. Murine and human suspension blood cells showed round morphology and significant increase of viable cells after 7 days in complete medium. Both cells treated with L-ascorbic acid exhibited low cytotoxic effect at 30, 50, and 90 µg/mL concentrations. In addition, murine blood cells treated with D-ascorbic acid caused total population cell death in all three concentrations at day 14, whereas human suspension blood cells only exhibited total population cell death at higher concentration, i.e. 90 µg/mL. In conclusion, L-ascorbic acid exhibited minimal cytotoxic effect on both primary cell sources as compared to lethal effect of D-ascorbic acid treatment. 

**Author Keywords**
Cytotoxicity; D-ascorbic acid; Human suspension blood cells; L-ascorbic acid; Mus musculus

**Index Keywords**
ascorbic acid, blood, cell, rodent, toxicity; Murinae, Mus musculus

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