Diterpenes from *Xylopia langsdorffiana* Inhibit Cell Growth and Induce Differentiation in Human Leukemia Cells

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Two new diterpenes were isolated from stems and leaves of *Xylopia langsdorffiana*, *ent*-atisane-7Ű,16Ű-diol (xylodiol) and *ent*-7Ű-acetoxytrachyloban-18-oic acid (trachylobane), along with the known 8(17),12*E*,14-labdatrien-18-oic acid (labdane). We investigated their antitumour effects on HL60, U937 and K562 human leukemia cell lines. We found that xylodiol was the most potent diterpene in inhibiting cell proliferation of HL60, U937 and K562 cells, with mean IC_{50} values of 90, 80 and 50 μM, respectively. Based on the nitroblue tetrazolium (NBT) reduction assay, all the diterpenes were found to induce terminal differentiation in HL60 and K562 cells, with xylodiol being the most effective. NBT reduction was increased by almost 120% after 12 h exposure of HL60 cells to xylodiol at a concentration lower than the IC_{50} (50 μM). Thus, xylodiol inhibited human leukemia cell growth *in vitro* partly by inducing cell differentiation, and merits further studies to examine its mechanism of action as a potential antitumoural agent.

Key words: Xylopia langsdorffiana, Diterpenes, Cytotoxicity