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Cytotoxic Effect of Ar-Turmerone on Various Cancer Cell Lines

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The Chinese traditional medicine *Curcuma zedoaria* (Zingiberaceae) has been proven to have a potent anti-inflammatory, antioxidant, and anticarcinogenic effects. A sesquiterpene, ar-turmerone, is isolated from *Curcuma zedoaria*. We have investigated the cytotoxic effect of ar-turmerone on K562, L1210, Jurkat, U937, Siha, RBL, and SNU cell lines by MTT assay. It exhibited potent cytotoxicity on these cancer cell lines (K562 IC₅₀ = 38.45ug/ml, L1210 IC₅₀ = 24.93ug/ml, Jurkat IC₅₀ = 21.65ug/ml, U937 IC₅₀ = 24.75ug/ml, Siha IC₅₀ = 61.13ug/ml, RBL IC₅₀ = 50.43ug/ml, SNU IC₅₀ = 42.38ug/ml). They showed increased inhibition ratio of cell viability according to the drug concentration bellow 100ug/ml in most cell lines. The fragmentations of DNA by ar-turmerone that is a characteristic of apoptosis were concentration- and time- dependent in these various cancer cell lines.

Keyword : ar-turmerone, cytotoxicity, apoptosis