

O-18: DIMERIC SESQUITERPENOID ISOLATED FROM *CURCUMA PARVIFLORA* WITH TRAIL RECEPTOR INDUCING EFFECT

Masami Ishibashi, Mayu Tamaki, Kazufumi Toume, and Takashi Ohtsuki
Graduate School of Pharmaceutical Sciences, Chiba University, Chiba 263-8522, Japan

During our search for bioactive natural products from tropical plants, we investigated the chemical constituents of *Curcuma parviflora* Wall. (Zingiberaceae) collected in northeast Thailand. Extensive investigation of extracts of the underground part of this plant led to the isolation of cytotoxic sesquiterpene-dimers, parviflorenes A - J, and their structures were elucidated by spectroscopic studies including X-ray crystal analysis. Parviflorene A possesses an unprecedented unsymmetrical bis-cadinane skeleton, while parviflorene C, E, and J are also sesquiterpene-dimers possessing different novel carbon frameworks. Studies on determination of absolute stereochemistry of parviflorenes A, B, D, F, and G were also described here. These new compounds showed cytotoxicity against P388 murine leukemia cells and other tumor cell lines. Parviflorenes A and F were cytotoxic against all tested tumor cell lines in the human cancer cell line panel assay, and DNA microarray and real time PCR studies revealed that parviflorene F enhanced the gene expression of TRAIL-R2 by 4.9 times at the concentration of 8 $\mu\text{g/mL}$. TRAIL-R2 is one of death receptors involved in signaling mechanism inducing apoptosis. Increase of TRAIL-R2 protein on addition of parviflorene F was also studied by Western blotting analysis.

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.