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# Bioactivity-guided High Performance Counter-current Chromatography and Following Semi-preparative Liquid Chromatography Method for Rapid Isolation of Anti-inflammatory Lignins from Dai Medicinal Plant, *Zanthoxylum acanthopodium* var. *timbor*

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**Abstract:** The development of Dai medicine is relatively slow, and *Zanthoxylum* has great economic and medicinal value. It is still difficult to obtain medicinal components from the low-polarity parts of *Zanthoxylum* belonging to Dai medicine. In this study, we introduced one simple and quick strategy of separating target compounds from the barks of *Z. acanthopodium* var. *timbor* by high-performance countercurrent chromatography (HPCCC) with an off-line anti-inflammatory activity screening mode. The development of this strategy was based on the TLC-based generally useful estimation of solvent systems (GUESS) method and HPCCC in combination. This paper presented a rapid method for obtaining target anti-inflammatory compounds. Three lignins were enriched by HPCCC with an off-line inhibition mode of nitric oxide production in lipopolysaccharide-stimulated RAW264.7 macrophage cells, using petroleum ether–ethyl acetate–methanol–water (3:2:3:2) as the solvent system. The results showed that this method was simple and practical and could be applied to trace the anti-inflammatory components of the low-polarity part in Dai medicine.

**Keywords:** *Zanthoxylum acanthopodium* var. *timbor*; anti-inflammatory activity screening; high-performance countercurrent chromatography; preparative separation

## 1 Original spectra of isolated compounds 1-3

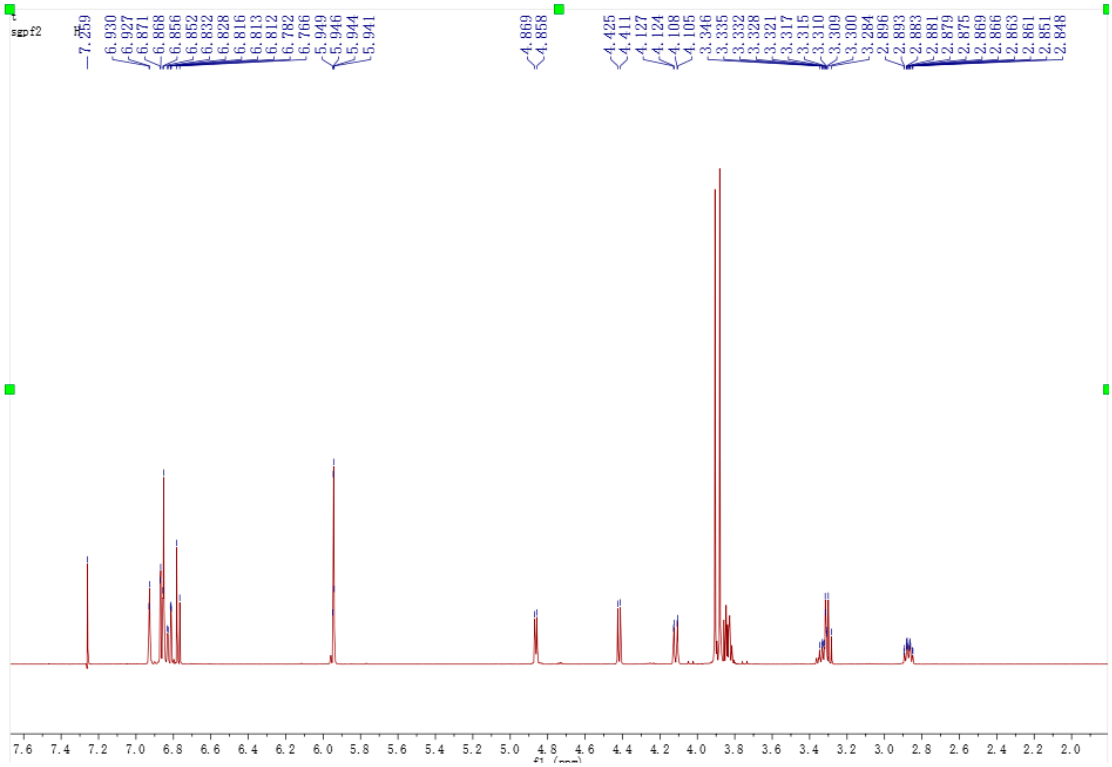


**Figure S1.** HNMR of compound **1.**

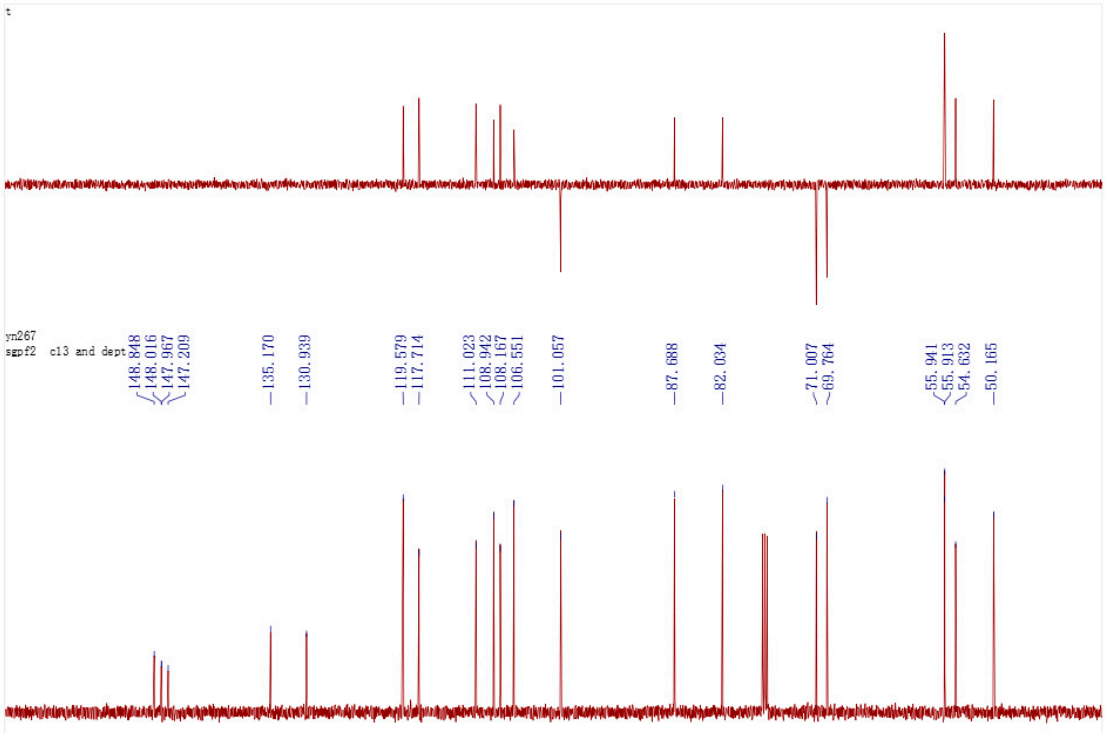


**Figure S2.** DEPT of compound **1.**

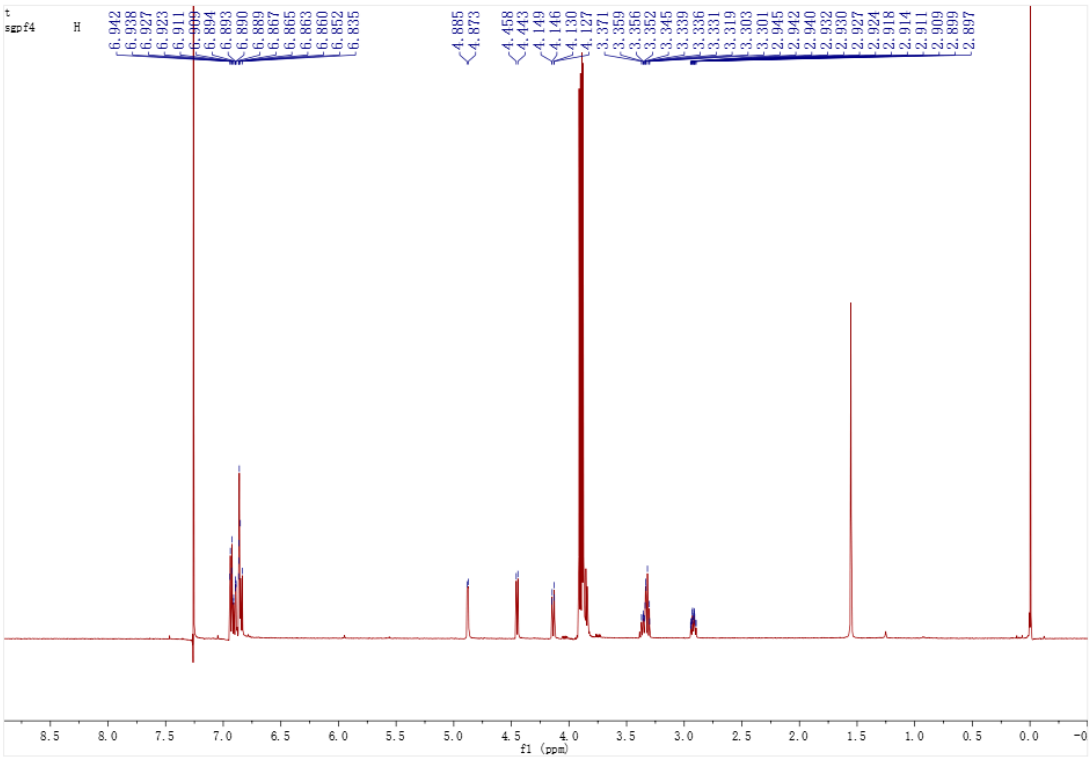


**Figure S3.** HNMR of compound **2.**

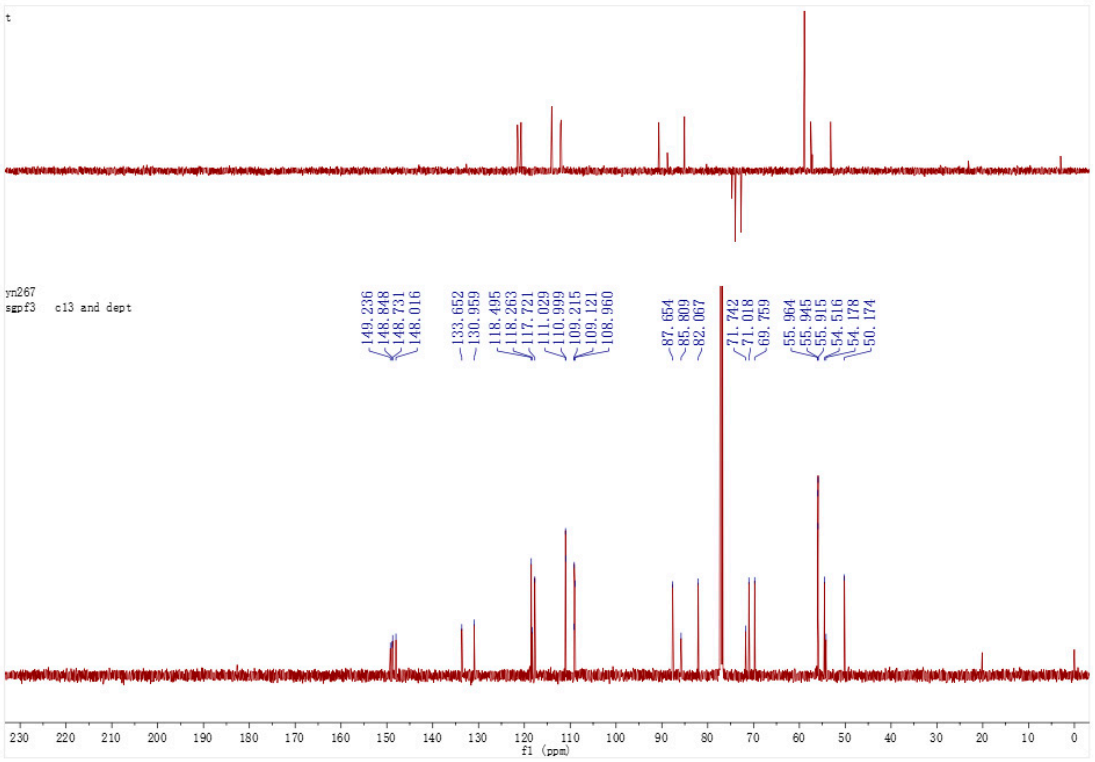


**Figure S4.** DEPT of compound **2.**

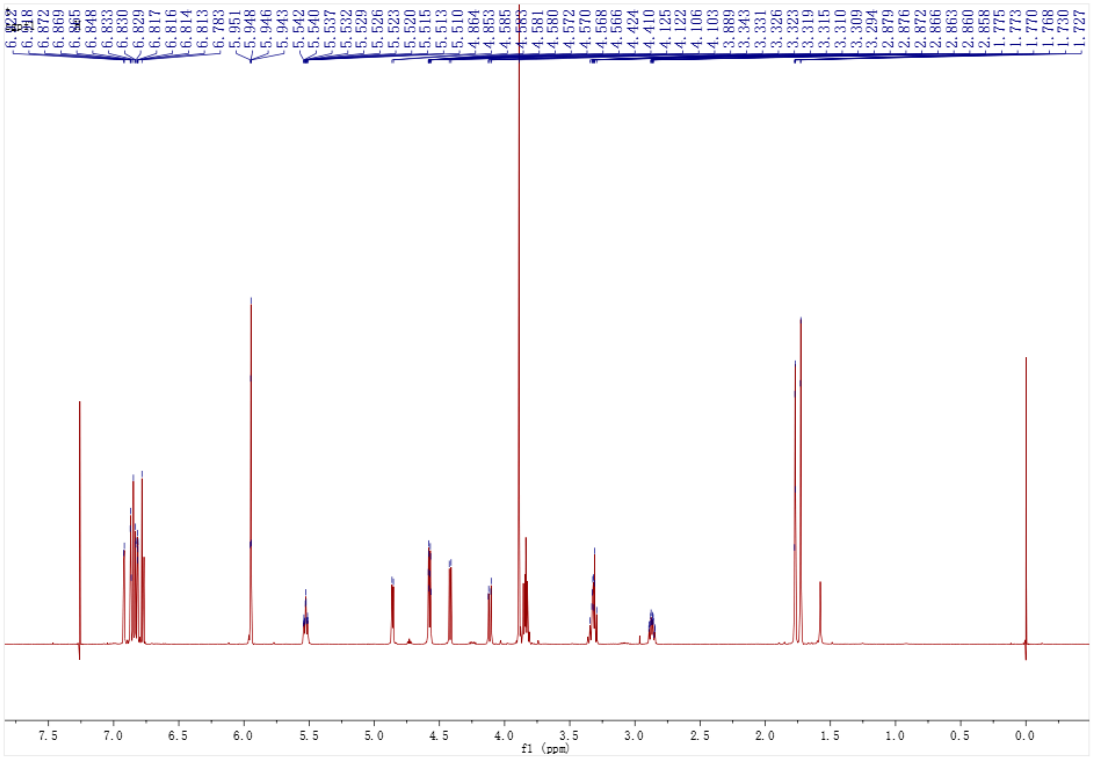


**Figure S5.** HNMR of compound **3.**

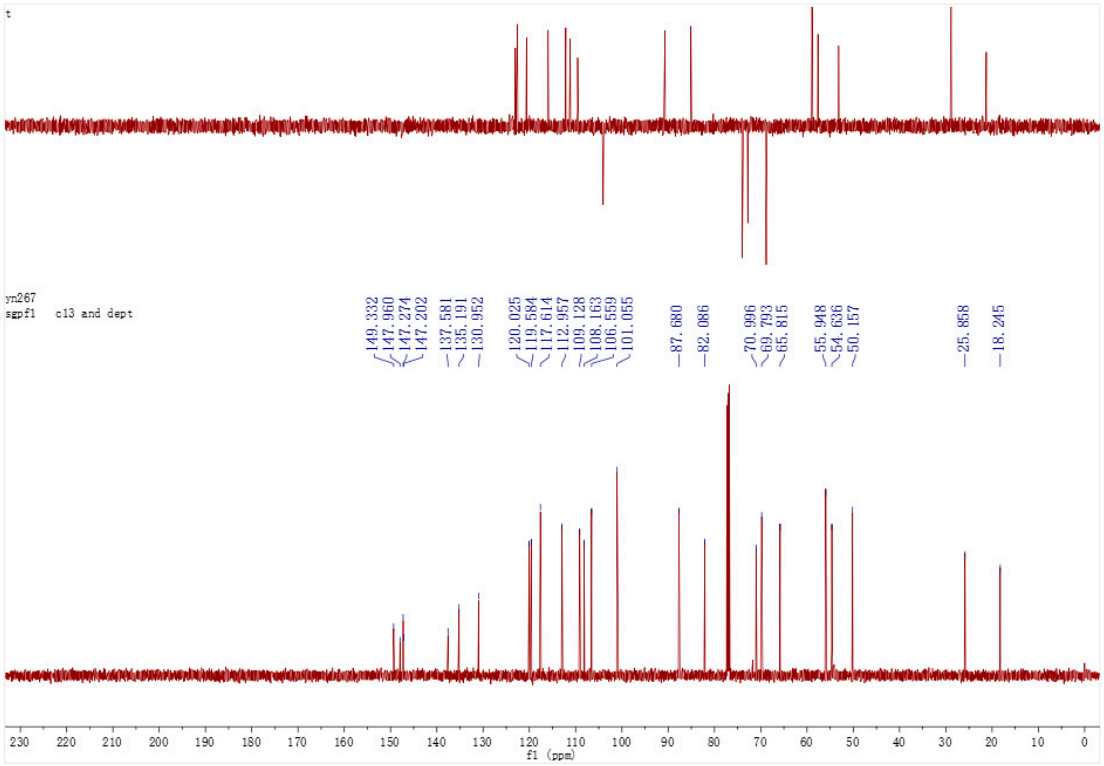


**Figure S6.** DEPT of compound **3.**