

**DISTRIBUSI KURKUMIN DAN KURKUMINOID PADA EMPU
DAN ANAKAN RIMPANG *Curcuma mangga* Val. SERTA
AKTIVITASNYA SEBAGAI ANTIOKSIDAN ALAMI**

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INTISARI

Telah dilakukan penelitian tentang distribusi kurkumin dan kurkuminoid yaitu demetoksikurkumin dan bisdemetoksikurkumin pada empu dan anakan rimpang *Curcuma mangga* Val. serta uji aktivitasnya sebagai antioksidan alami. Penelitian diawali dengan isolasi kurkumin dan kurkuminoid menggunakan metode ekstraksi maserasi dengan etanol 95% selama 24 jam. Kurkumin dan kurkuminoid diidentifikasi dengan KLT menggunakan eluen hasil optimasi dan kadarnya diukur menggunakan *TLC Scanner*. Kurkumin dan kurkuminoid lalu dimurnikan menggunakan metode Kromatografi Lapis Tipis Preparatif (KLTP) dan hasilnya dianalisis dengan HPLC dan diidentifikasi struktur menggunakan FTIR. Kurkumin dan kurkuminoid diuji aktivitasnya sebagai antioksidan menggunakan metode penangkapan radikal DPPH.

Hasil penelitian ini menunjukkan bahwa terdapat perbedaan kadar kurkumin dan kurkuminoid pada empu dan anakan rimpang *Curcuma mangga* Val. yaitu 1,67% dan 2,89%. Berdasarkan hasil analisis dengan HPLC dan identifikasi dengan FTIR, metode pemurnian dengan KLTP dapat digunakan untuk memurnikan senyawa kurkumin, namun tidak dapat memurnikan demetoksikurkumin dan bisdemetoksikurkumin. Aktivitas antioksidan (IC_{50}) kurkumin dan kurkuminoid diperoleh pada empu dan anakan rimpang *Curcuma mangga* Val. sebesar 78,54 $\mu\text{g/mL}$ dan 71,03 $\mu\text{g/mL}$. Aktivitas antioksidan komponen individual pada empu dan anakan rimpang yaitu kurkumin > demetoksikurkumin > bisdemetoksikurkumin. Aktivitas antioksidan terbaik ada pada isolat kurkumin empu dan anakan rimpang dengan harga IC_{50} sebesar 63,68 $\mu\text{g/mL}$ dan 69,82 $\mu\text{g/mL}$.

Kata kunci: *Curcuma mangga* Val., kurkumin, kurkuminoid, antioksidan.

**DISTRIBUTION OF CURCUMIN AND CURCUMINOID FROM
MOTHER AND FINGER RHIZOMES OF *Curcuma mangga* Val.
AND IT'S ACTIVITY AS A NATURAL ANTIOXIDANT**

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ABSTRACT

The studies of distribution curcumin and curcuminoid namely demethoxycurcumin and bisdemethoxycurcumin on mother and finger rhizomes of *Curcuma mangga* Val. and its activity as a natural antioxidant have been carried out. The study began with the isolation of curcumin and curcuminoid using the maceration extraction method with 95% of ethanol for 24 hours. Curcumin and curcuminoid have been identified by using TLC method with the optimized eluent, and its purities measured by using TLC Scanner. Curcumin and curcuminoid were purified using Preparative Thin Layer Chromatography (PTLC) method and the results analyzed by HPLC and identified its structure by using FTIR. Curcumin and curcuminoid were tested as a natural antioxidant activity using DPPH radical scavenging method.

The result of the study showed that there were differences in purities of curcumin and curcuminoid on mother and finger rhizomes of *Curcuma mangga* Val. of 1.67% and 2.89%, respectively. PTLC purification method can be used to purified the curcumin compound based on the analysis by HPLC and identification using FTIR, but it did not work on demethoxycurcumin and bisdemethoxycurcumin. The antioxidant activity (IC_{50}) amount of curcumin and curcuminoid obtained in the mother and finger rhizomes of *Curcuma mangga* Val. were 78.54 $\mu\text{g/mL}$ and 71.03 $\mu\text{g/mL}$, respectively. The order of antioxidant activity for the individual components of the mother and finger rhizomes were curcumin>demethoxycurcumin>bisdemethoxycurcumin. The best antioxidant activity results were 63.68 $\mu\text{g/mL}$ and 69.82 $\mu\text{g/mL}$ as IC_{50} number of the isolated curcumin mother and finger rhizome

Keyword: *Curcuma mangga* Val., curcumin, curcuminoid, antioxidant.