

## The synthesis of chalcon derivatives containing epoxide SO<sub>2</sub>Me with potential anticancerous effects

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**Background and Aims:** By the inhibition of cyclooxygenase2 (Cox-2) enzymes, pain, inflammation, cancer and Alzheimer can be controlled. Non-steroidal anti inflammatory ((NSAIDS) drugs with a SO<sub>2</sub>Me group are important cox-2 inhibitors. On the other hand, epoxides are compounds that can inhibit pain and inflammation. Our molecular modeling studies guided us toward producing aromatic cycles with these groups. Chalcones are active drugs with various medical effects such as anti-bacterial, anti-oxidant and anti-tumoral characteristics. We therefore decided to synthesize these compounds on chalcon base. In order to produce epoxide from alkenes in the presence of carbonyl, we used various oxidants in different conditions and compared them. As a result, hydrogen peroxide 30% in a metal catalyzer had the highest yield for conversion to epoxide. We first obtained chalcon derivatives and then did the following epoxidations.

The structure and the intermediate and final compounds were controlled and approved by M-NMR, C-NMR and LC-mass.

**Keywords:** Chalcon; Anti cancer; Epoxide