

## Poster Presentation

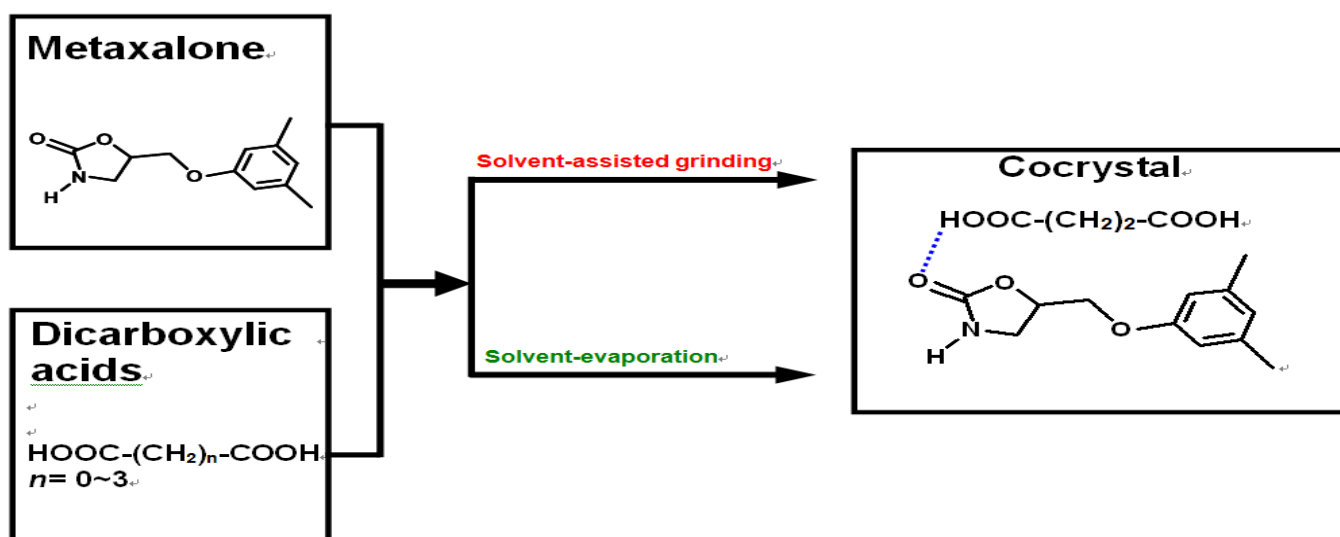
MS43.P23

### Studies on Cocrystal Formation of Metaxalone with Short-chain Dicarboxylic Acids

H. Lin<sup>1</sup>, T. Wu<sup>1</sup>, Y. Huang<sup>1</sup>, S. Lin<sup>1</sup>

<sup>1</sup>Yuanpei University, Department of Biotechnology and Pharmaceutical Technology, Hsin Chu, Taiwan, ROC.

A possible cocrystal formation between metaxalone and short-chain dicarboxylic acids ( $\text{HOOC}-(\text{CH}_2)_n-\text{COOH}$ ,  $n=0-3$ ) was quickly investigated using a solvent-assisted grinding approach. Differential scanning calorimetry (DSC), Fourier transform infrared (FTIR) microspectroscopy, and powder X-ray diffraction (PXRD) were used to verify the cocrystal formation between metaxalone and each dicarboxylic acid. A solvent evaporation method was used to prepare the standard cocrystal. The cocrystal formation was also estimated by using a one-step simultaneous DSC-FTIR microspectroscopy. The present study indicates that only  $n=2$  of short-chain dicarboxylic acids such as succinic acid, fumaric acid and maleic acid could form a cocrystal with metaxalone. Both solvent-assisted grinding technique and solvent evaporation method were successfully applied to prepare the metaxalone cocrystal with  $n=2$  of short-chain dicarboxylic acids. Moreover, this cocrystal formation was also easily screened and estimated using a unique DSC-FTIR microspectroscopy in real time. Acknowledgement This work was supported by National Science Council, Taipei, Taiwan, ROC (NSC 100-2320-B-264-001-MY3).



**Keywords:** Cocrystal, Metaxalone, Short-chain Dicarboxylic Acids