



Preparation, Crystal Structure and Prodrug Studies of Genistein Benzensulfonate

You PENG ^{1,2*}, Li-Jun GAN ¹ & Ze-yuan DENG ²

¹ *Department of Chemistry and Engineering, Jiujiang University, Jiujiang 332005, People's Republic of China;*

² *State Key Laboratory of Food Science and Technology, Nanchang University, Nanchang 330047, People's Republic of China*

SUMMARY. 4'-ethyl-7-phenylsulfonylgenistein (EPG, **3**), a potential prodrug for genistein (**1**), was synthesized in high yield and its crystal structure was reported firstly. It possesses better physical and chemical properties such as solubility, lipid/water partition coefficient, LogP, and hydrolysis kinetics than its original form. The LogP value (2.07) and the half-life of the hydrolysis value (13.4 h) show that its oral bioavailability is possibly improved evidently compared with that of genistein. These results indicate that EPG can be considered a potential prodrug for genistein.

KEY WORDS: Crystal structure, Genistein benzensulfonate, Hydrolysis, Partition coefficient, Prodrug.

* Author to whom correspondence should be addressed. *E-mail:* trihydracid@126.com