



Response Surface Optimization of the Preparation of Baicalin- β -cyclodextrin Inclusion Compound

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SUMMARY. The aim of this study was to optimize the preparation process of baicalin- β -cyclodextrin inclusion compound (baicalin- β -CD) by adopting Response Surface Methodology (RSM). On the basis of the single-factor experiment, the conditions of the inclusion process were optimized by adopting RSM with the factors to be investigated (*i.e.* the proportion of β -CD and baicalin, inclusion time and inclusion temperature); the quadratic regression equation model of the inclusion rate of baicalin- β -CD was constructed via simulation. The analysis of the experimental results showed that the optimal inclusion conditions are: proportion of β -CD and baicalin of 2.51, inclusion time of 1.57 h, and inclusion temperature of 63.79 °C. There was a good compliance between the measured result of the inclusion rate (89.83%) and the predictive value (90.22%) of the equation obtained by fitting response surface. The preparation process of baicalin- β -cyclodextrin inclusion compound established by using RSM has a higher inclusion rate, and there is a good coincidence between the regression equation and the actual situation.

KEY WORDS: Baicalin, β -cyclodextrin, Inclusion compound, Preparation process, Response Surface Method.

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