Supporting information

For

Dispersive matrix solid-phase extraction method coupled with high performance liquid chromatography-tandem mass spectrometry for ultrasensitive quantification of endogenous brassinosteroids in minute plants and its application for geographical distribution study

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Figure Captions

Figure S1 Effect of solid dispersant of DMSPE on the recoveries of BRs (n=3). Conditions: 0.2 ng mL^{-1} of standard BRs solution; the recovery was calculated by $A/A_1 \times 100\%$, where A was the peak area of standard BRs using DMSPE method, A_1 was the peak area of standard BR solution without sample preparation.

Figure S2 Effect of the temperature of vibration and centrifugation on the recoveries of BRs (n=3). Conditions: oilseed rape samples spiked 0.2 ng mL^{-1} BRs; the recovery was calculated by $(A-A_0)/A_1 \times 100\%$, where A was the peak area of BRs in spiked plant sample, A_0 was the peak area of BRs in plant sample, A_1 was the peak area of standard BR solution without sample preparation.

Tables

Table S1 Absolute recoveries of d_3-24-epiBL and d_3-24-epiCS in the 2.0 mg FW of oilseed rape samples (n=3).

Table S2 Method comparison between the present and others.

Reference

1. P. Xin; J. Yan; J. Fan; J. Chu; C. Yan, A dual role of boronate affinity in high-sensitivity detection of vicinal diol brassinosteroids from sub-gram plant tissues via UPLC-MS/MS, Analyst **2013**, 138, 1342-1345.

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3. Wang, L.; Duan, C.; Wu, D.; Guan, Y., Quantification of endogenous brassinosteroids in sub-gram plant tissues by in-line matrix solid-phase dispersion-tandem solid phase extraction coupled with high performance liquid chromatography-tandem mass spectrometry. Journal of Chromatography A **2014,** 1359, 44-51.

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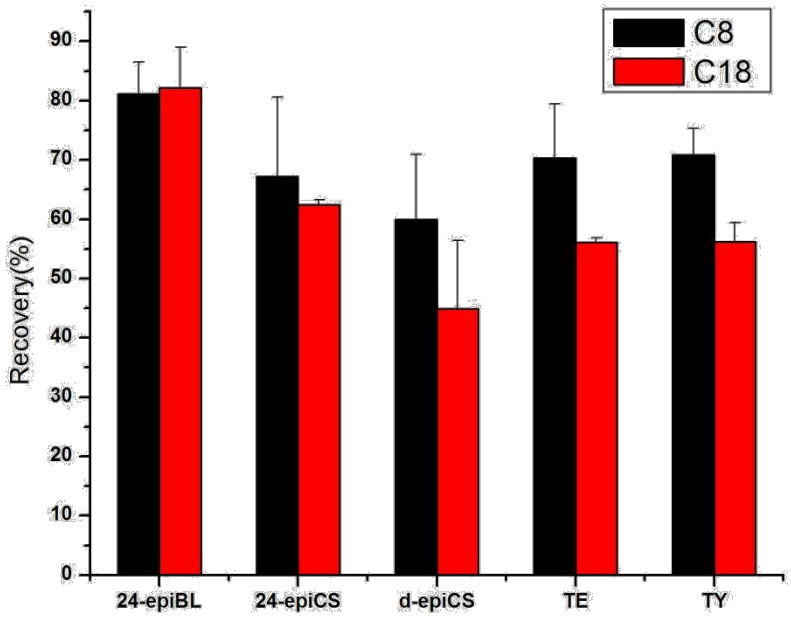

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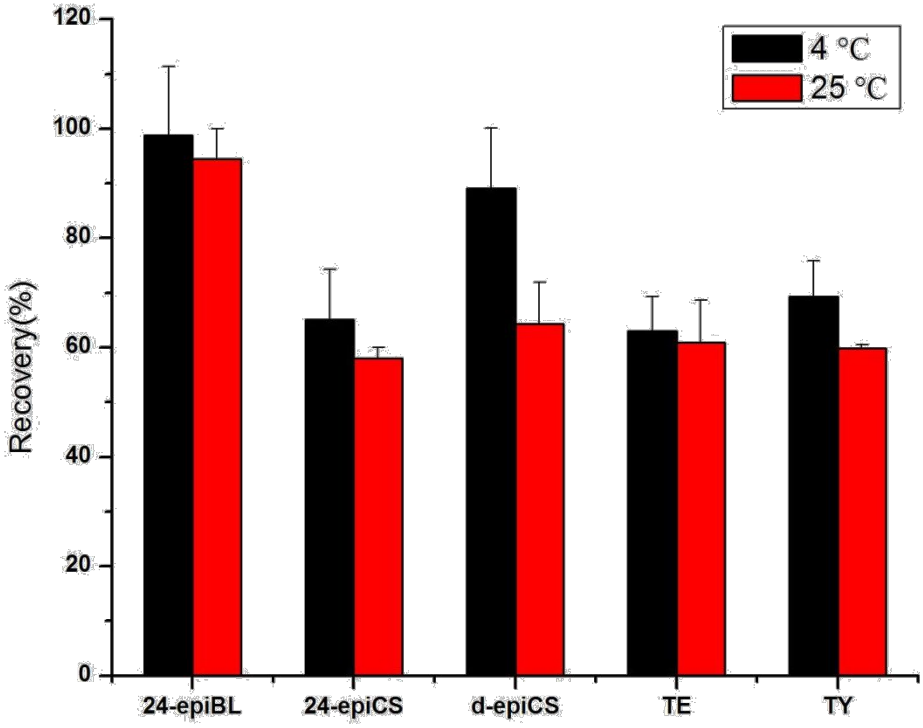

Figure S2 Effect of temperature of vibration and centrifugation on the recoveries of BRs (n=3).

Conditions: oilseed rape samples spiked 0.2 ng mL^{-1} BRs; the recovery was calculated by $(A-A_0)/A_1 \times 100\%$, where A was the peak area of BRs in spiked plant sample, A_0 was the peak area of BRs in plant sample, A_1 was the peak area of standard BR solution without sample preparation.

Table S1 Absolute recoveries of d_3-24-epiBL and d_3-24-epiCS in the 2.0 mg FW of oilseed rape samples (n=3).

	Absolute recoveries (%)	CV (%)
d_3-24-epiBL	115.3	5.2
d_3-24-epiCS	98.2	4.2

Table S2 Method comparison between the present and others.

Method	Sample	Analytes	LOD (pg)	Sample amount (mg FW)	Analytical time (h)	Ref.
SPE-MSPE	*Arabidopsis thalians* siliques	BL, CS, TY, TE, 24-epiBL	0.34~0.44	500	>2	1
LLE	Honey	28-norBL, BL, 28-homoBL, 28-norCS, CS	0.04~0.31	100	>1	2
MSPD-tandem SPE	Rice	TY, TE, 24-epiBL, 24-epiCS, DS, d-epiCS	0.04~0.2	50	>1	3
tip extraction	Rice	28-norBL, BL, 28-homoBL, 28-norCS, CS	0.02~0.11	50	<1	4
DMSPE	Oilseed rape *Arabidopsis thalians* seedlings	24-epiBL, 24-epiCS, d-epiCS, TE, TY	0.069~0.34[a]	2	<1	this work

[a] For Oilseed rape.