

磁分散固相萃取-液相色谱-串联质谱法测定蜂蜜中 38 种抗生素 残留

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Determination of 38 antibiotic residues in honey by magnetic dispersive solid-phase extraction-liquid chromatography-tandem mass spectrometry

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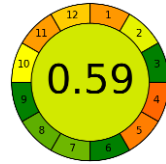
附表 1 38 种抗生素的溶剂线性和基质线性
Table S1 Solvent linearity and matrix linearity of the 38 types of antibiotics

Category	Compound	Linear range/(μg/L)	Matrix linear equation	R^2	Solvent linear equation	R^2	Matrix effect
CAPs	LV	0.02-100	$Y=54290X+19594$	0.9969	$Y=53373X+16712$	0.9998	1.017
	DIF	0.1-100	$Y=189876X+152847$	0.9982	$Y=206958X+220783$	0.9969	0.917
	LOM	0.1-100	$Y=470179X+653275$	0.9952	$Y=523345X+970399$	0.9905	0.898
	DAN	0.1-100	$Y=306184X-520866$	0.9944	$Y=319614X-664680$	0.9915	0.958
	ENR	0.1-100	$Y=359317X+144358$	0.9994	$Y=431089X+435138$	0.9963	0.834
QNs	ORB	0.1-100	$Y=543097X+1029892$	0.9908	$Y=541455X+900089$	0.9930	1.003
	GAT	0.1-100	$Y=164105X+207784$	0.9960	$Y=196991X+303987$	0.9933	0.833
	MAR	0.1-100	$Y=342682X-401297$	0.9963	$Y=348385X-778210$	0.9982	0.984
	ENO	0.1-100	$Y=549933X+572883$	0.9949	$Y=569237X+334096$	0.9977	0.966
	FLE	0.1-100	$Y=481515X+527370$	0.9966	$Y=586824X+536354$	0.9962	0.821
	NOR	0.1-100	$Y=432500X-116102$	1.0000	$Y=424396X-207588$	0.9998	1.019
	OFL	0.1-100	$Y=540496X+359028$	0.9990	$Y=656365X+973280$	0.9933	0.823
	PEF	0.1-100	$Y=474621X-363229$	0.9992	$Y=399701X-237351$	0.9996	1.187

	CIP	0.1-100	$Y= 465286X - 6035$	1.0000	$Y= 464637X + 29964$	0.9998	1.001
	SPA	0.1-100	$Y= 530367X - 294527$	0.9993	$Y= 597702X + 851440$	0.9938	0.887
	CIN	0.1-100	$Y= 182706X + 65885$	0.9999	$Y= 154166X - 36175$	0.9999	1.185
	OXO	0.1-100	$Y= 752100X + 1917162$	0.9913	$Y= 750647.X + 1687518$	0.9909	1.002
	NAL	0.1-100	$Y= 350296X + 546100$	0.9932	$Y= 358114X + 574434$	0.9938	0.978
	FLU	0.1-100	$Y= 711126X + 1550192$	0.9914	$Y= 727330X + 1348684$	0.9911	0.978
	SAR	0.1-100	$Y= 331284X - 128601$	0.9998	$Y= 324076X - 116583$	0.9999	1.022
SAs	SDZ	0.1-200	$Y= 191652X + 28227$	0.9998	$Y= 383030X + 73965$	1.0000	0.973
	STZ	0.1-200	$Y= 490101X - 552168$	1.0000	$Y= 225686X - 258382$	0.9990	0.849
	SPD	0.1-200	$Y= 320237X - 153778$	0.9979	$Y= 490532X + 161159$	0.9997	0.999
	SMR	0.1-200	$Y= 827513X - 124860$	0.9997	$Y= 338048X - 92917$	0.9998	0.947
	SME	0.1-200	$Y= 127358X - 24316$	1.0000	$Y= 829541X + 494872$	0.9991	0.998
	SMI	0.1-200	$Y= 582308X - 425630$	1.0000	$Y= 121148X + 222345$	0.9951	1.051
	SMA	0.1-200	$Y= 779215X + 165981$	0.9996	$Y= 566571X + 285156$	0.9990	1.028
	SMP	0.1-200	$Y= 280119X + 77838$	1.0000	$Y= 828642X + 699139$	0.9990	0.940
	SCP	0.1-200	$Y= 552617X - 637809$	0.9998	$Y= 290454X + 260022$	0.9991	0.964
	SMM	0.1-200	$Y= 102123X + 111408$	0.9977	$Y= 532586X + 457210$	0.9980	1.038
	SSZ	0.1-200	$Y= 2238742X + 174958$	0.9983	$Y= 101464X + 160824$	0.9972	1.006
	SDX	0.1-200	$Y= 260287X + 5976.9$	0.9998	$Y= 2149553X + 2138283$	0.9987	1.041
	SMX	0.1-200	$Y= 100315X + 70227$	0.9999	$Y= 250977X + 330428$	0.9982	1.037
	SB	0.1-200	$Y= 184160X - 37114$	0.9998	$Y= 94357X + 172137$	0.9964	1.063
	SPZ	0.1-200	$Y= 282382X + 36912$	1.0000	$Y= 184100X + 158178$	0.9980	0.991
	SCZ	0.1-200	$Y= 2238496X + 234248$	1.0000	$Y= 293973X + 182551$	0.9996	0.961
	SDM	0.1-200	$Y= 287378X - 27936$	0.9998	$Y= 2151199X + 1659926$	0.9988	1.041
	SQX	0.1-200	$Y= 372759X - 123933$	1.0000	$Y= 287592X + 16514$	0.9999	0.999

Note: Y: peak area; X: mass concentration.

附表 2 该方法与参考文献中的 AGREE 绿色评分
Table S2 AGREE greenness scores of this method and other reported methods

Pretreatment methods	Scoring items												AGREE assessment
	1	2	3	4	5	6	7	8	9	10	11	12	
LLE ^[28]	0.3	0.55	1	0.2	0.25	1	0.79	0.82	1	0.5	0.31	0.4	
QuEChERS ^[29]	0.3	0.55	1	0.4	0.25	1	0.79	1	1	0.5	0.14	0.4	
SPE ^[30]	0.3	0.42	1	0.4	0.25	1	0.69	0.64	1	0.5	0.19	0.4	

MDSPE ^[31]	0.3	0.45	1	0.8	0.75	1	0.91	0.55	1	0.5	0.7	0.6	
MDSPE (This method)	0.3	0.65	1	0.8	0.75	1	1	1	1	0.5	0.5	0.6	