Electronic Supplementary Material (ESI) for RSC Advances.

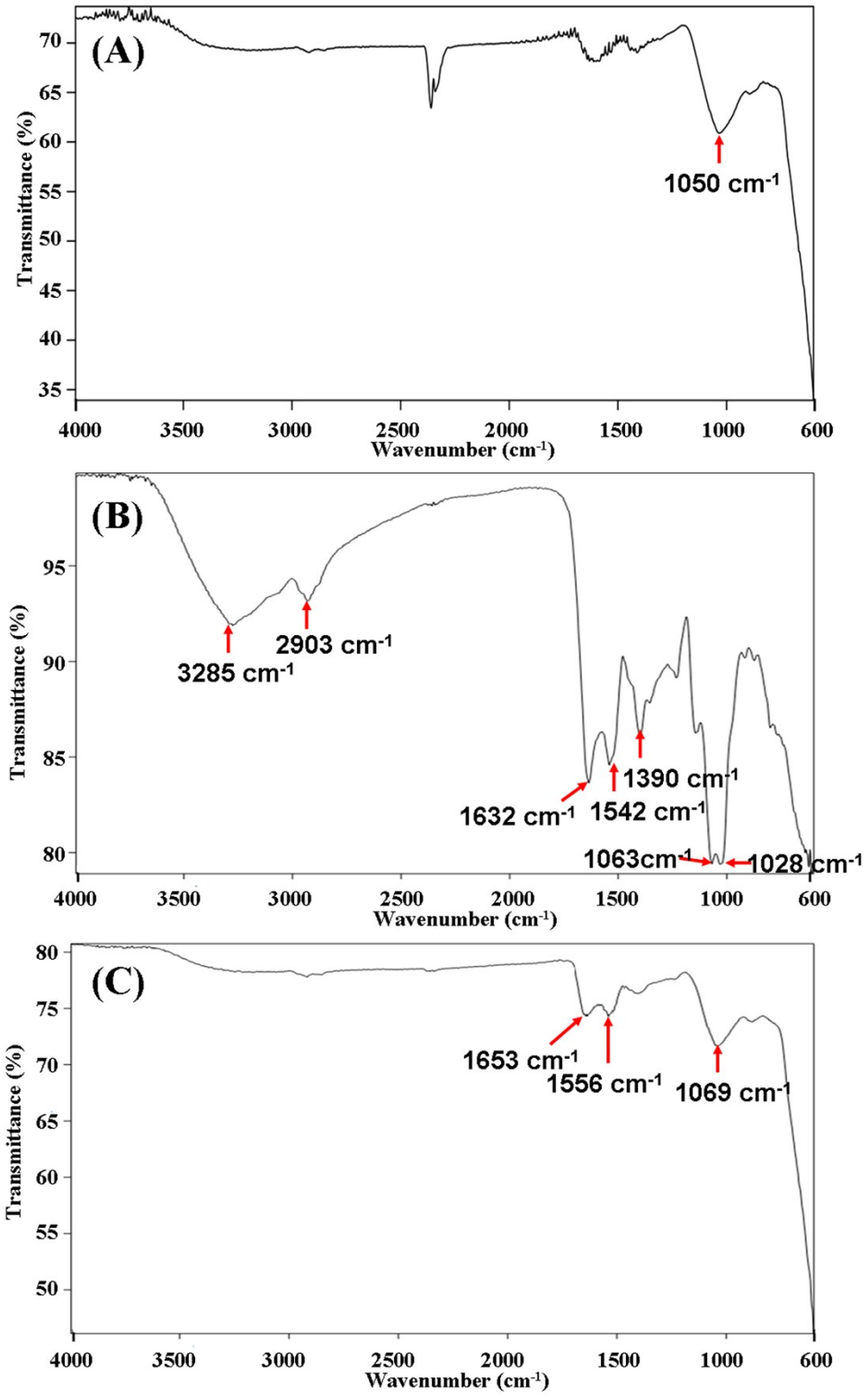

Figure S1.IR spetra of (A) magnetic beads, (B) tyrosinase and (C) tyrosinase conjugated magnetic beads

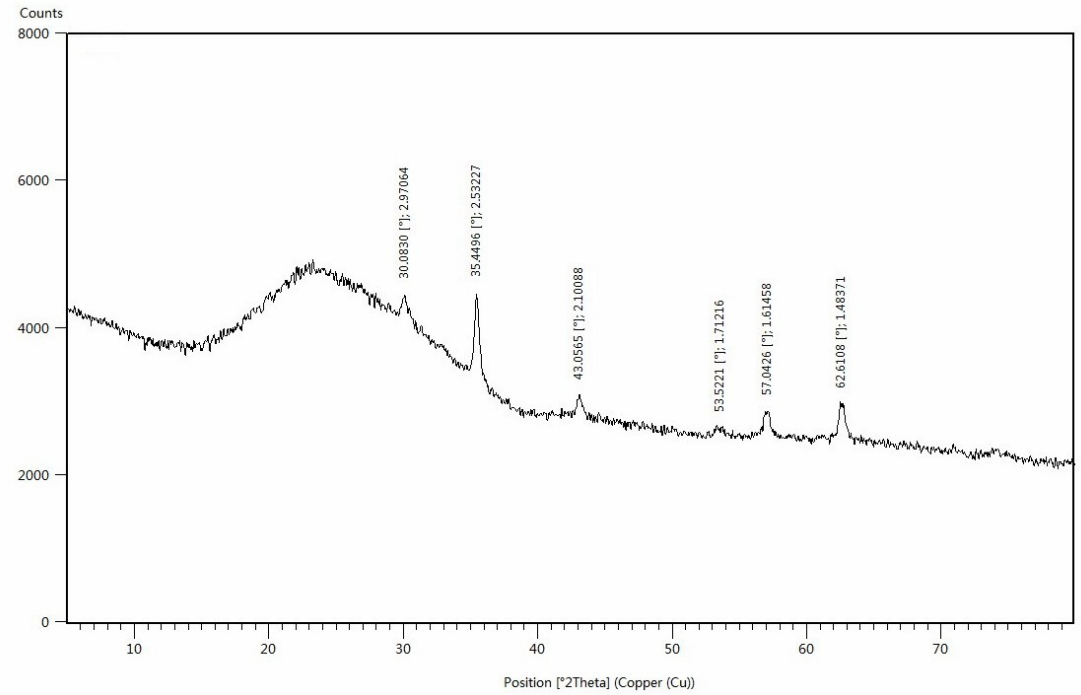

Figure S2.X-ray diffraction image of magnetic beads

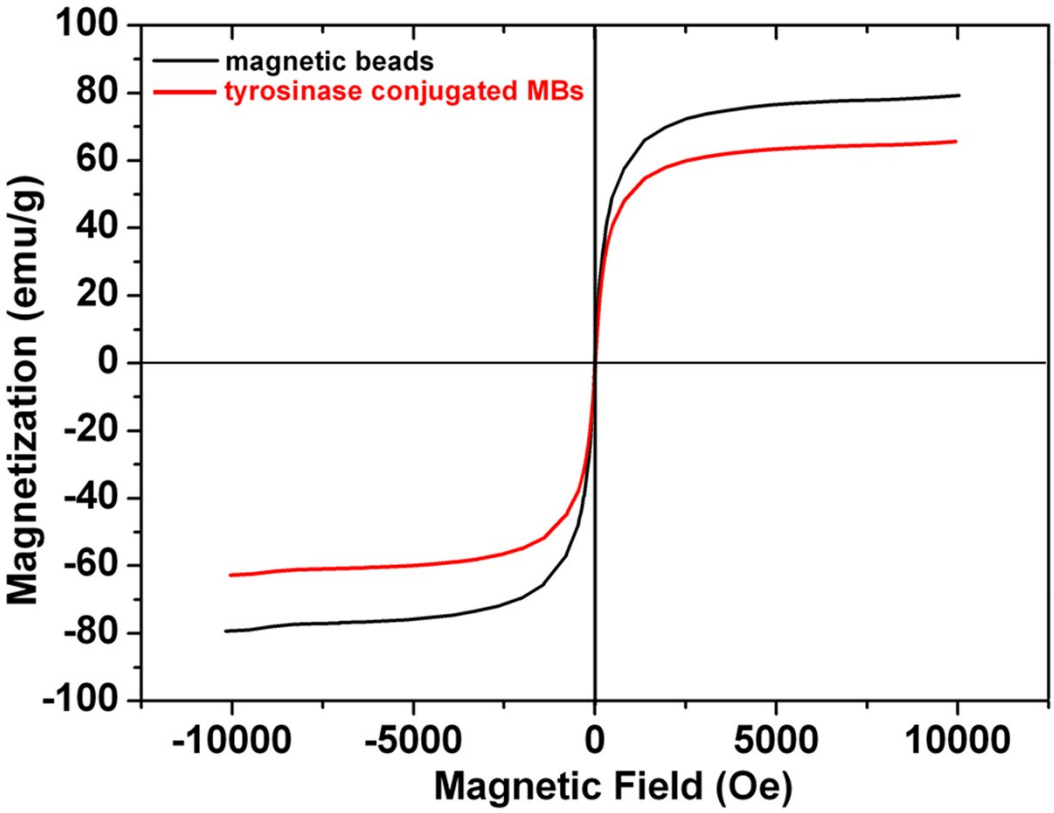

Figure S3.Magnetic Curves of magnetic beads(Black)and tyrosinase conjugated magnetic beads (Red)

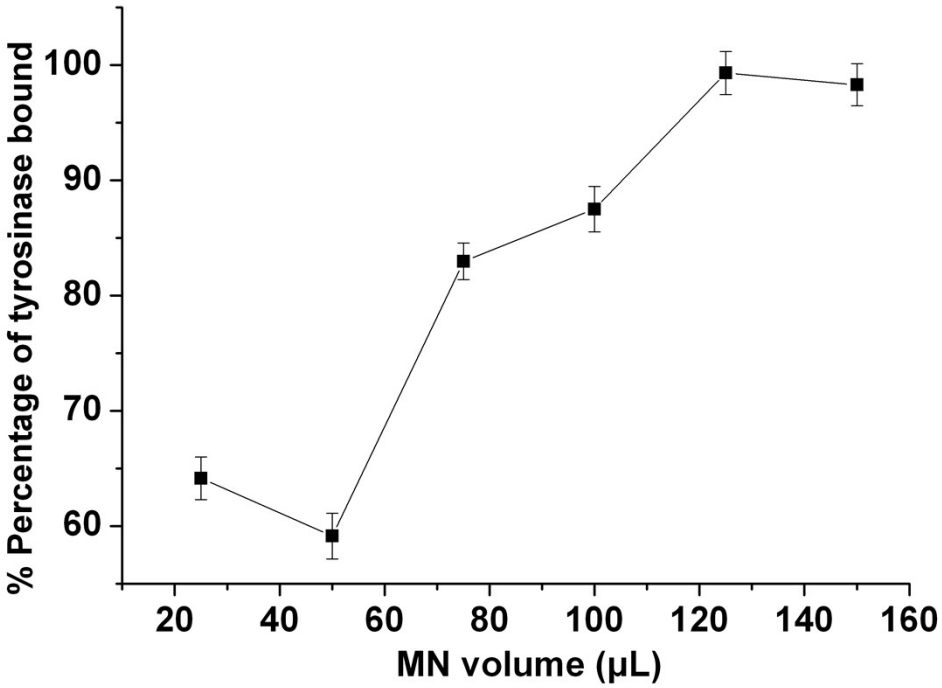

Figure S4.Effect of the amount of Fe_3O_4 beads added on the percentage of tyrosinase conjugated

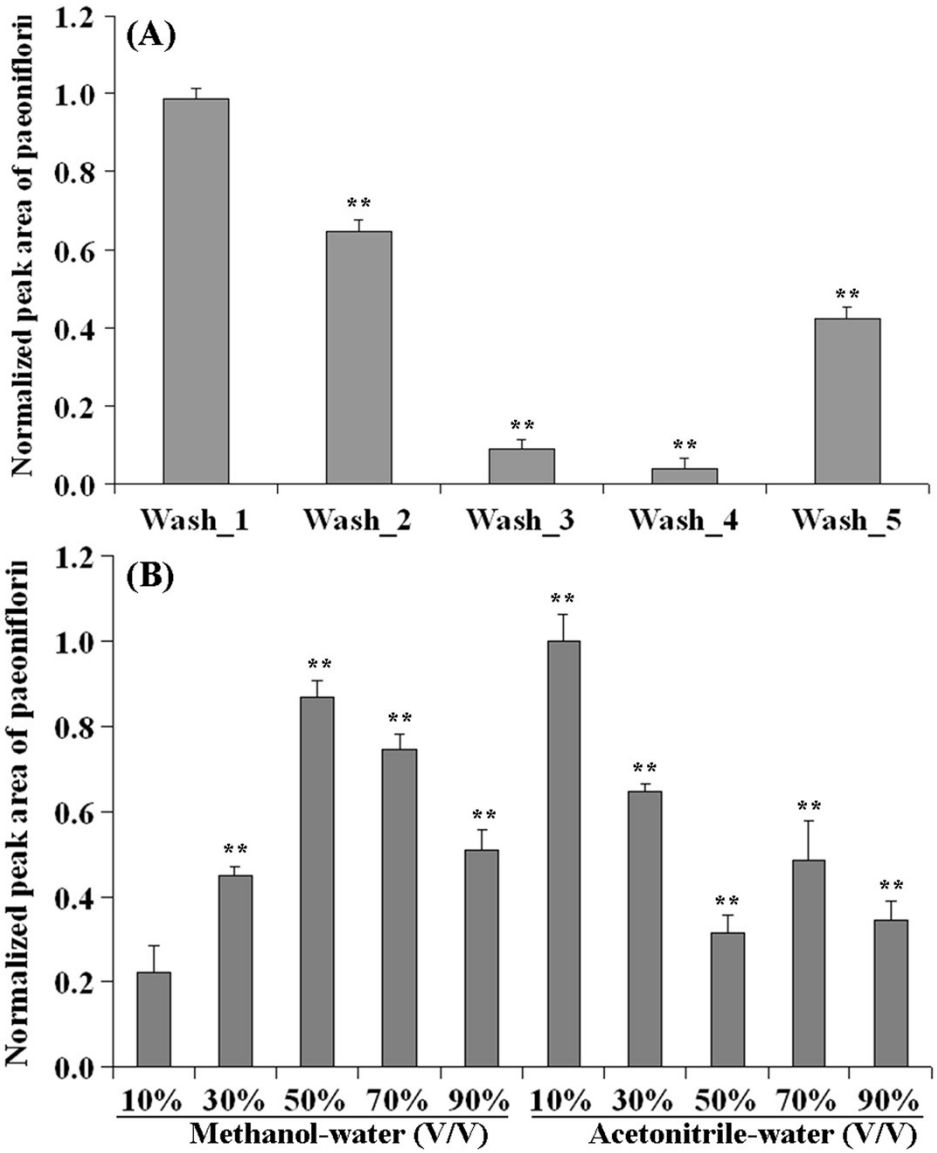

Figure S5.Effect of wash times and wash solvent on the extraction yield

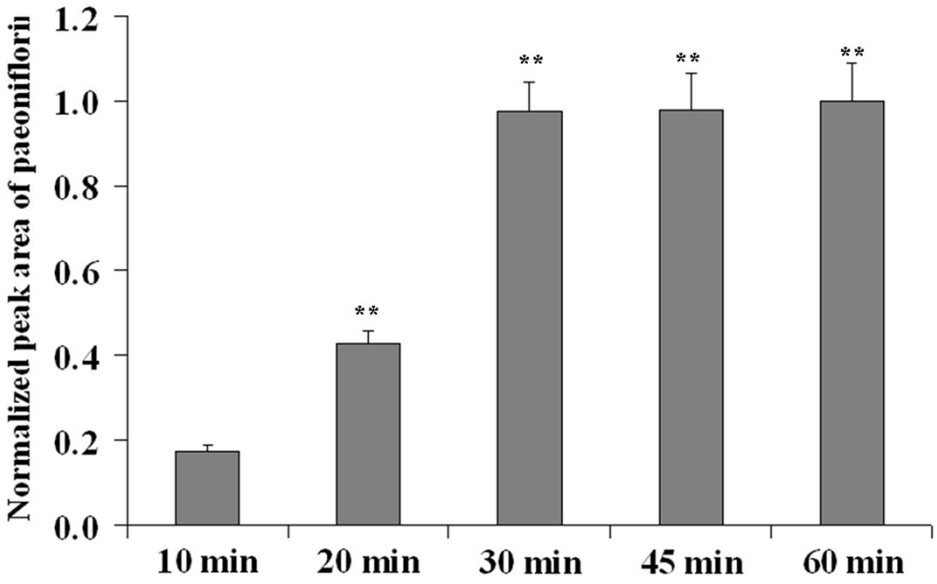

Figure S6.Effect of incubation time on the extraction yield

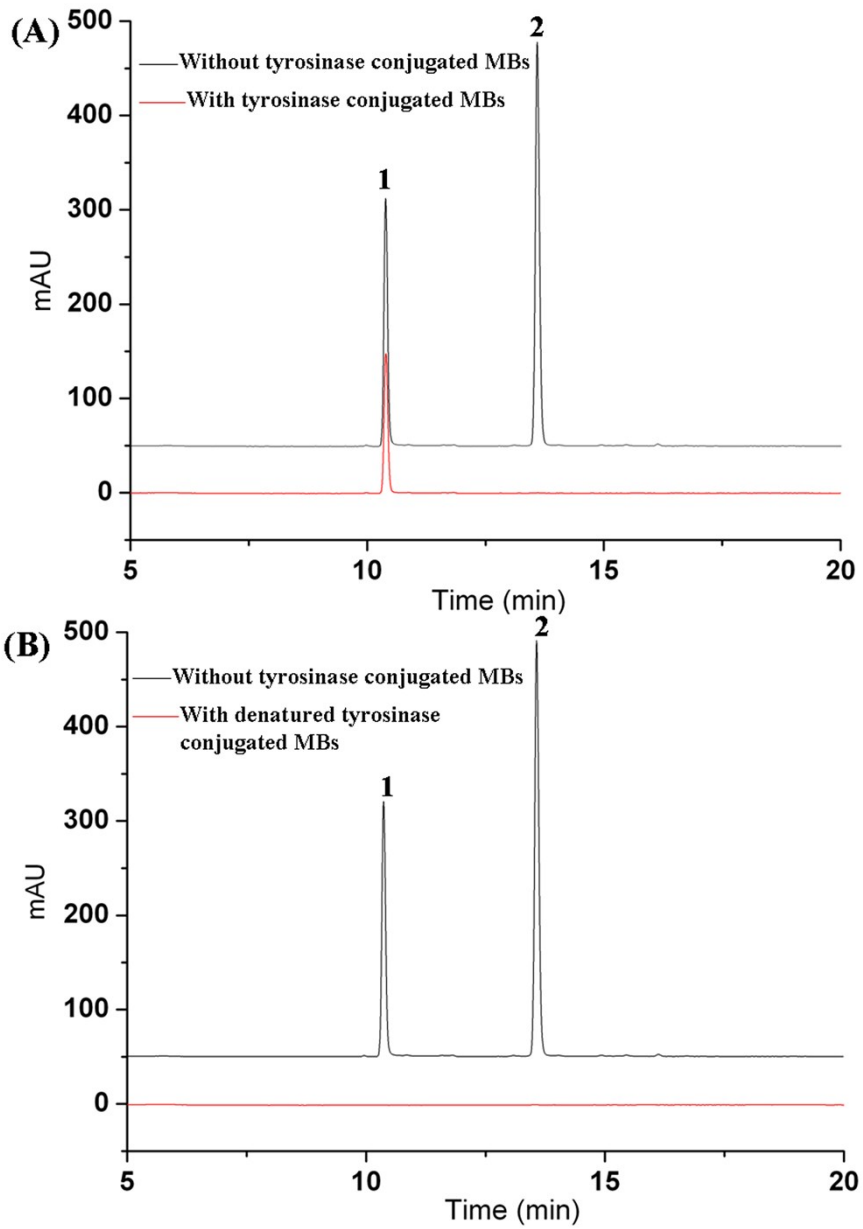

Figure S7.Specificity of the tyrosinase conjugated magnetic beads based approach

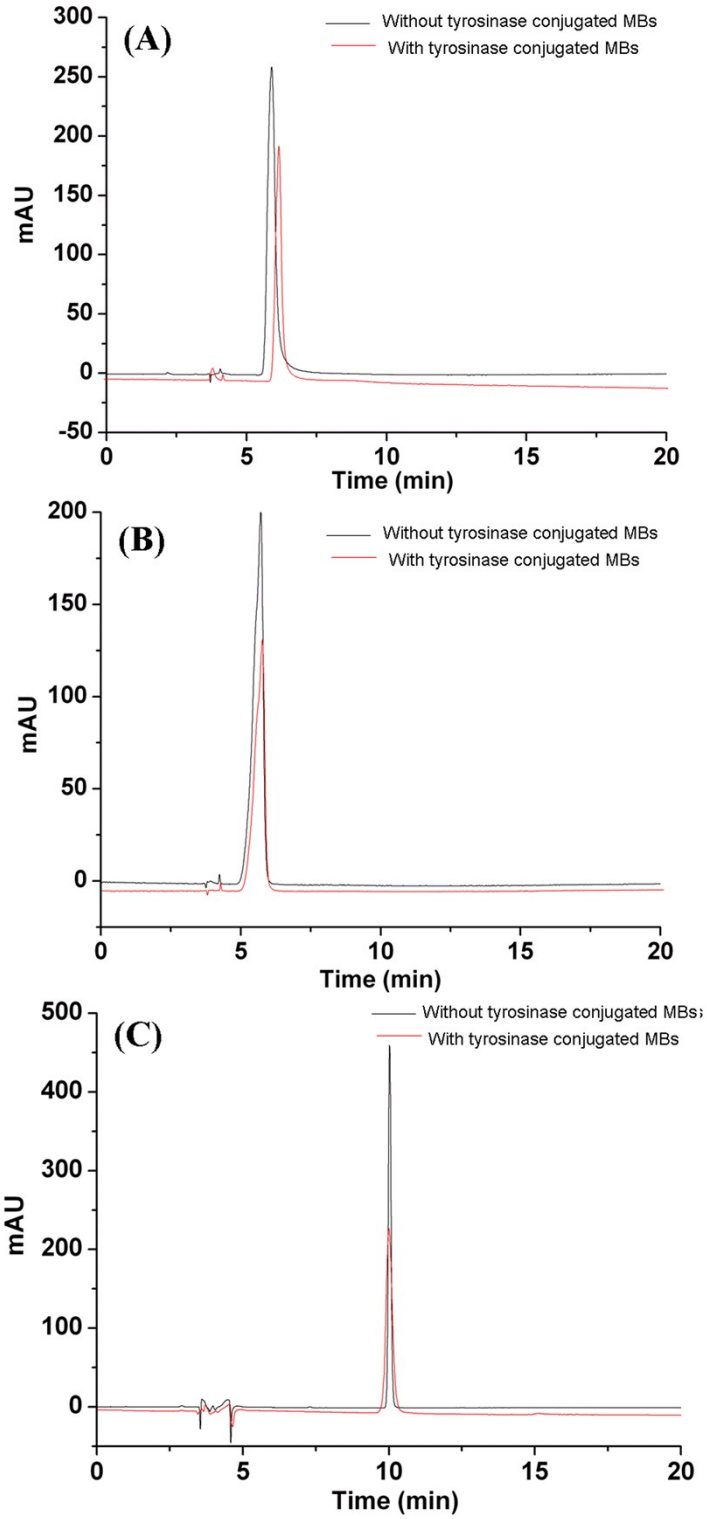

Figure S8.HPLC chromatograms of kojic acid (A), arbutin (B) and vanillic acid (C)

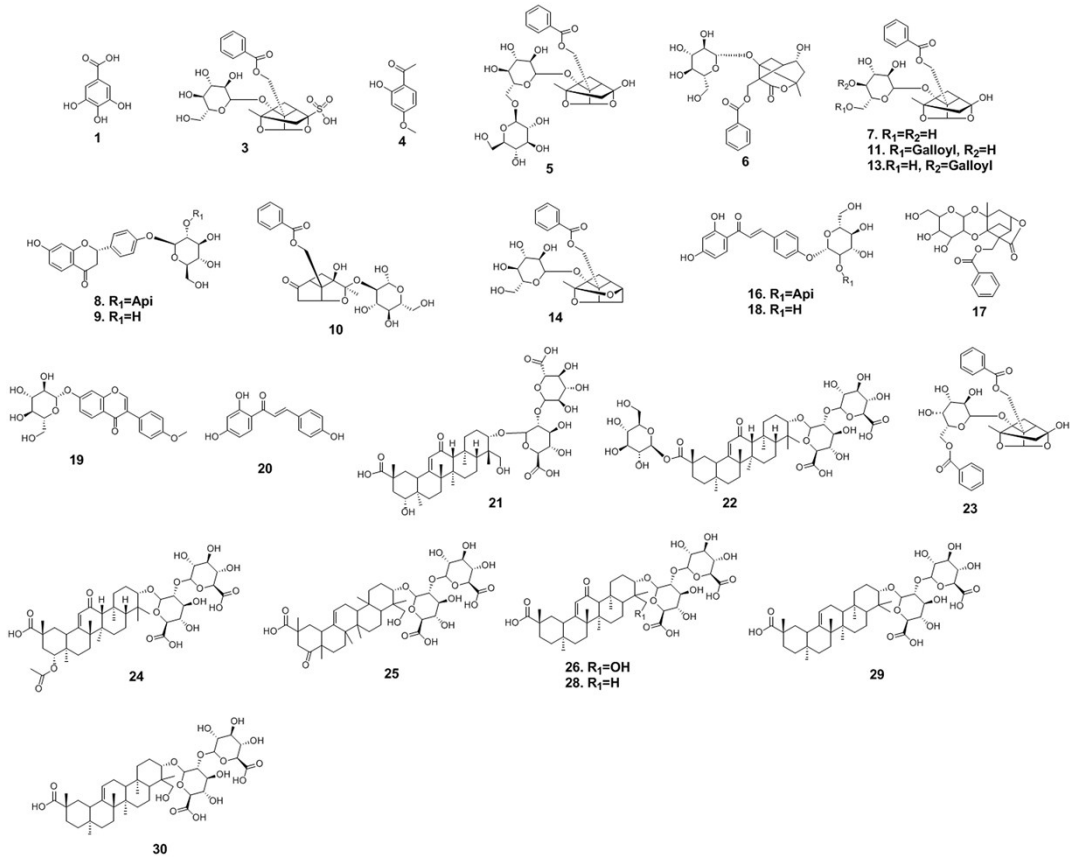

Figure S9.Chemical structures of constituents in San-Bai decoction

Table S1. Contents of the major compounds in San-Bai decoction

No.	Compounds	Concentration (mg/mL)
1	Albiflorin	0.132
2	Paeoniflorin	0.244
3	Liquiritin apioside	0.027
4	Liquiritin	0.002
5	6'-*O*-Galloyl paeoniflorin	0.013
6	Ononin	0.004
7	Glycyrrhizic acid	0.044

Table S2. A comparison between the literature method and our method

Method	Literature	This study
Materials	Amine-terminated magnetic nanoparticles (i.d.50 nm)	Carboxyl functionalized magnetic beads (i.d. 400-500 nm)
Enzyme immobilization solvent	Glutaraldehyde	EDC/NHS
Detection instrument	Finnigan LCQ^{deca} plus ion trap mass spectrometer (Low precision)	AB ScieX 5600 Q-TOF mass spectrometer (High precision)
Protein-material amount ratio	152 μg/mg	800 μg/mg
Dissociate solvent	Methanol (not optimized)	10% Acetonitrile–water (optimized)
Wash times	Three times	Four times
Model drug	Arbutin	Paeoniflorin
Optimization method	Univariate analysis	Response surface method
Incubation time	15 min	30 min
Incubation temperature	37 °C	34.84 °C
Incubation pH	6.8	6.98
Reusability	Yes	Yes
Application object	One herbal extract	Herbal prescription