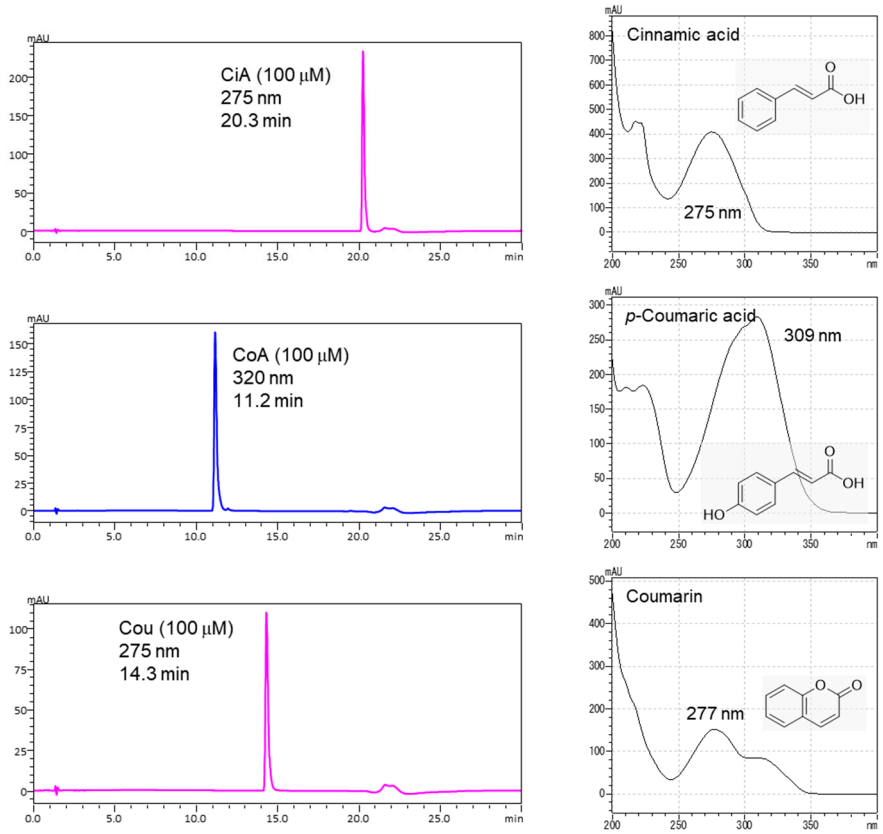
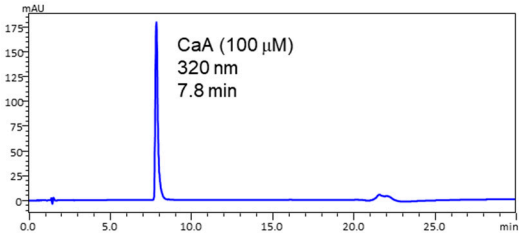
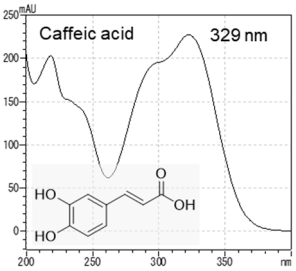
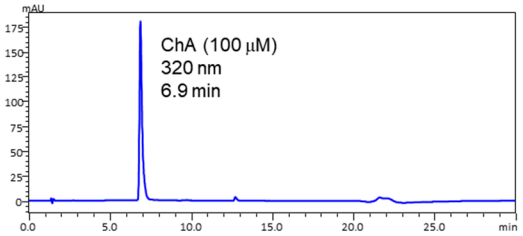
Figure S1: Chromatograms of standard HCAs, (A) their chemical structures, and (B) their UV spectra showing particular wavelengths. Described numbers in spectra are λ_{max} of the wavelengths. The analytes were separated on a Sunshell C18 column (2.6 µm, 2.1 × 150 mm; ChromaNik Tech., Japan). The column oven temperature was maintained at 40 ℃. The mobile phase was 0.1 % aqueous formic acid (A) and 0.1 % formic acid in acetonitrile (B). The gradient elution program was as follows: 0–15 min, 10–30 % B; 15–15.1 min, 30–90 % B; 15.1–19 min, 90 % B; and 19–19.1 min, 90–10 % B; followed by the re-equilibration of the initial solvent composition for 10.9 min (19.1–30 min). The flow rate was kept constant at 0.3 mL/min.

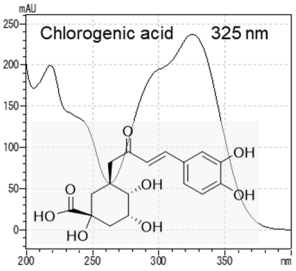
(A) (B)

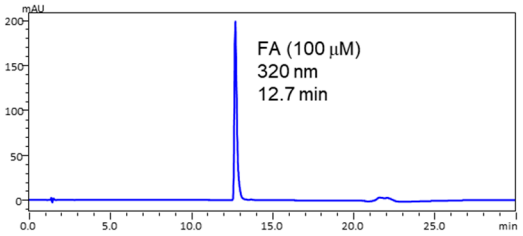


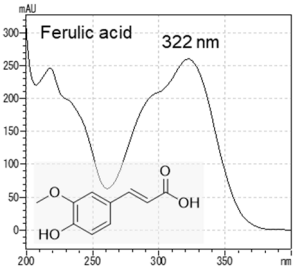

mAU
CaA (100 μM)
320 nm
7.8 min
min

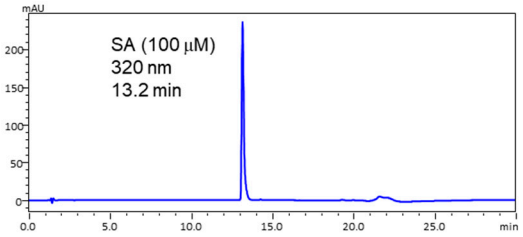

mAU
Caffeic acid
329 nm
nm


mAU
ChA (100 μM)
320 nm
6.9 min
min


mAU
Chlorogenic acid
325 nm
nm


mAU
FA (100 μM)
320 nm
12.7 min
min


mAU
Ferulic acid
322 nm
nm


mAU
SA (100 μM)
320 nm
13.2 min
min

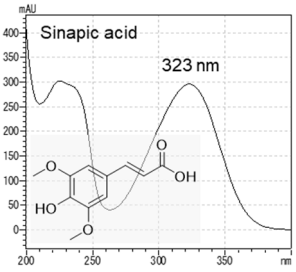
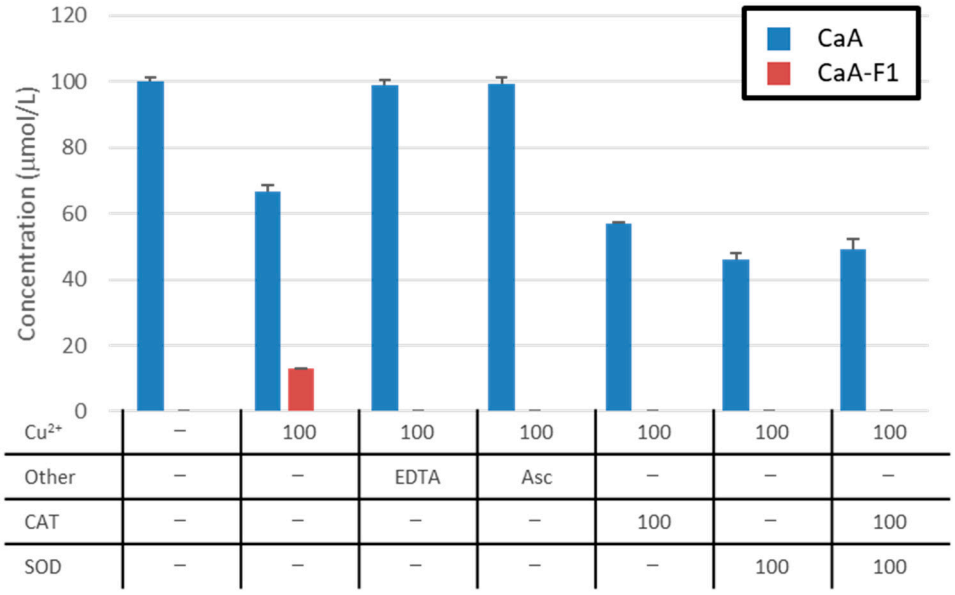

mAU
Sinapic acid
323 nm
nm

Figure S2: Inhibitation of HCA derivatization using antioxidants or chelators.

(A) CaA with copper ion in FaSSIF at 37 ℃

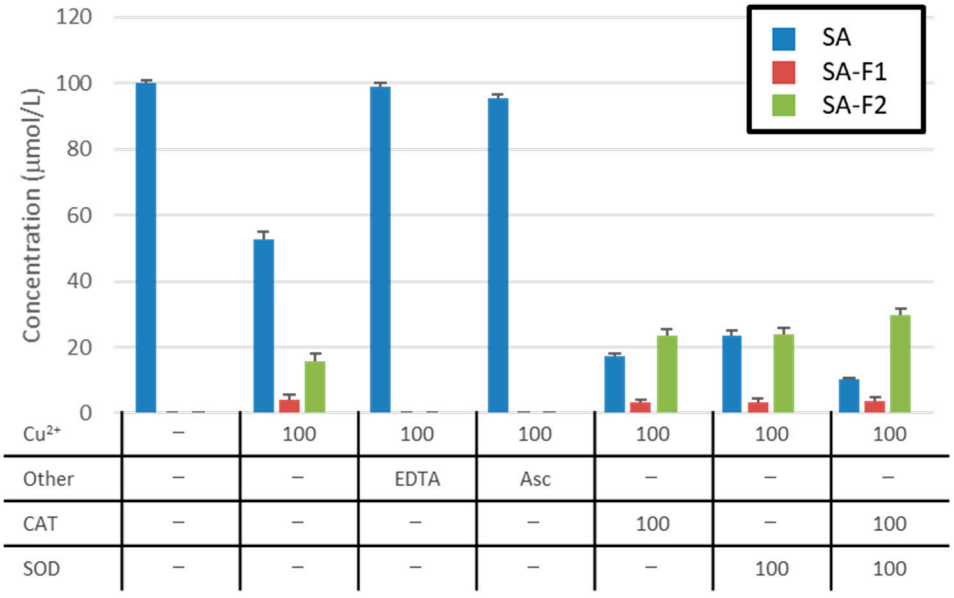
(B) SA with copper ion in FaSSIF at 37 ℃

(A)



Cu^{2+}	–	100	100	100	100	100	100
Other	–	–	EDTA	Asc	–	–	–
CAT	–	–	–	–	100	–	100
SOD	–	–	–	–	–	100	100

(B)



Cu^{2+}	–	100	100	100	100	100	100
Other	–	–	EDTA	Asc	–	–	–
CAT	–	–	–	–	100	–	100
SOD	–	–	–	–	–	100	100