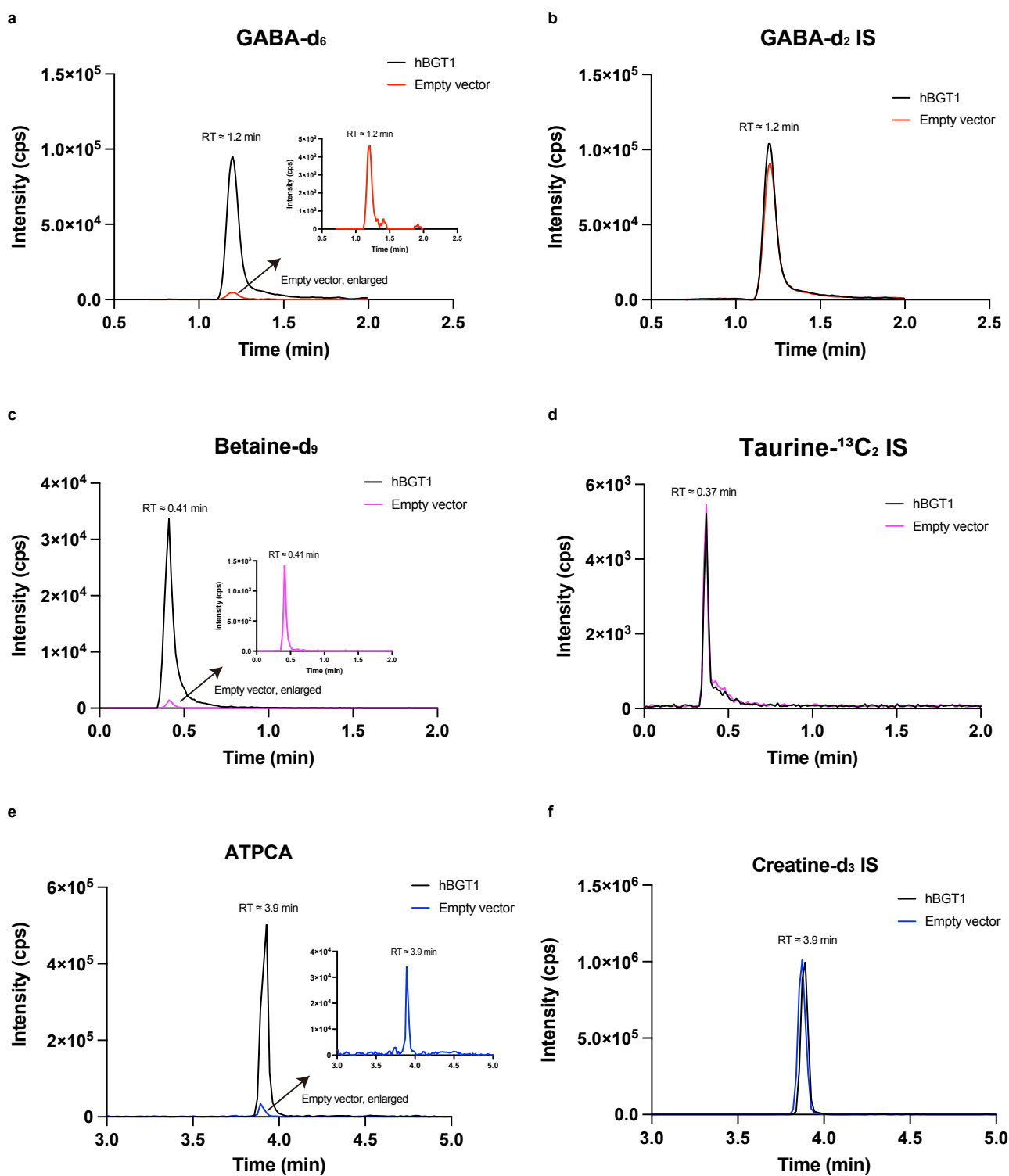




Section A: Representative LC–MS/MS chromatograms of analytes and corresponding internal standards from empty-vector control and hBGT1-expressing cells.

a, GABA-d₆. **b**, GABA-d₂ internal standard. **c**, Betaine-d₉. **d**, Taurine-¹³C₂ internal standard. **e**, ATPCA. **f**, Creatine-d₃ internal standard. Insets in **a**, **c** and **e** show enlarged chromatograms of the empty-vector control to visualize the lower analyte signals. Retention times are indicated in each panel. Signal intensity is shown in counts per second (cps), and the x axis indicates retention time in minutes.

GABA-d₆ uptake assay

Sample name	Retention time (analyte, min)	Retention time (IS, min)	Peak area (analyte)	Peak area (IS)	Peak area ratio (analyte/IS)
Empty vector-1	NF	1.20	NF	554594	NF
Empty vector-2	NF	1.20	NF	784141	NF
hBGT1-1	1.20	1.19	489933	607933	0.806
hBGT1-2	1.20	1.20	495144	646641	0.766

Betaine-d₉ uptake assay

Sample name	Retention time (analyte, min)	Retention time (IS, min)	Peak area (analyte)	Peak area (IS)	Peak area ratio (analyte/IS)
Empty vector-1	0.42	0.37	1780	15100	0.118
Empty vector-2	0.42	0.37	3910	16600	0.236
hBGT1-1	0.41	0.37	46500	13800	3.370
hBGT1-2	0.41	0.37	66500	8790	7.565

ATPCA uptake assay

Sample name	Retention time (analyte, min)	Retention time (IS, min)	Peak area (analyte)	Peak area (IS)	Peak area ratio (analyte/IS)
Empty vector-1	3.89	3.87	13140	500605	0.026
Empty vector-2	3.91	3.89	27925	491353	0.057
hBGT1-1	3.91	3.89	226069	476397	0.475
hBGT1-2	3.91	3.89	346126	503423	0.688

NF, no detectable peak found.

Section B: Representative processed quantification outputs for LC–MS/MS-based uptake assays in empty-vector control and hBGT1-expressing cells.

Representative processed quantification outputs for the LC–MS/MS uptake assays are shown for empty-vector control and hBGT1-expressing cells. NF indicates that no analyte peak was detected.