

Table S1. Repeatability results for (a) [⁶⁸Ga]GaFAPI-46 and (b) [^{nat}Ga]GaFAPI-46.

(a)

Injection	Acitvity (MBq/mL)	Inj. Time	Δt (min)	Corrected Activity	Peak Area	RF ¹
[⁶⁸ Ga]GaFAPI-46	46,88	20:48	96	0,3524	89014,3	252595,5
[⁶⁸ Ga]GaFAPI-46		21:05	113	0,2963	78107,2	263581,1
[⁶⁸ Ga]GaFAPI-46		21:21	129	0,2517	69723,4	276969,8
[⁶⁸ Ga]GaFAPI-46		21:37	145	0,2139	55882,1	261310,9
[⁶⁸ Ga]GaFAPI-46		21:54	162	0,1795	43717,5	243106,8
[⁶⁸ Ga]GaFAPI-46		22:11	179	0,1512	41455,1	274143,3
%RSD						4,89

(b)

Injection	Area
[^{nat} Ga]GaFAPI-46	97,59
[^{nat} Ga]GaFAPI-46	104,38
[^{nat} Ga]GaFAPI-46	101,67
[^{nat} Ga]GaFAPI-46	103,79
[^{nat} Ga]GaFAPI-46	106,10
[^{nat} Ga]GaFAPI-46	107,52
%RSD	3,40

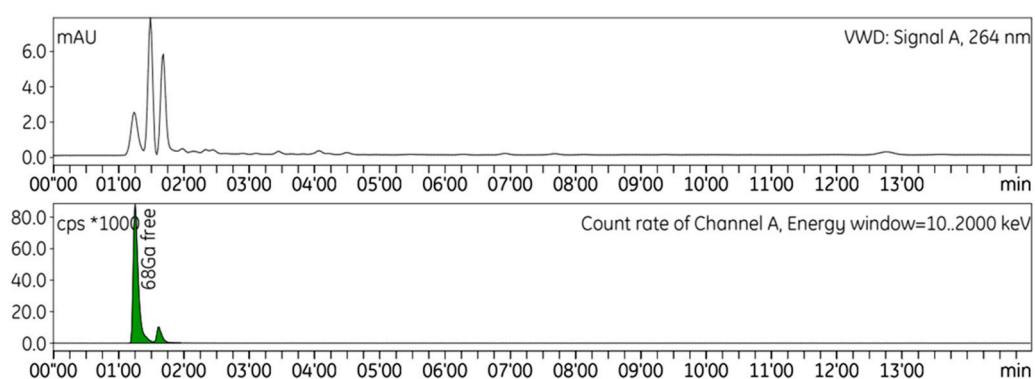
$$^1 \text{ RF} = \frac{\text{Peak area}}{\text{Radioactivity injection time}}$$

Table S2. Repeatability results of radioTLC method for [⁶⁸Ga]GaFAPI-46.

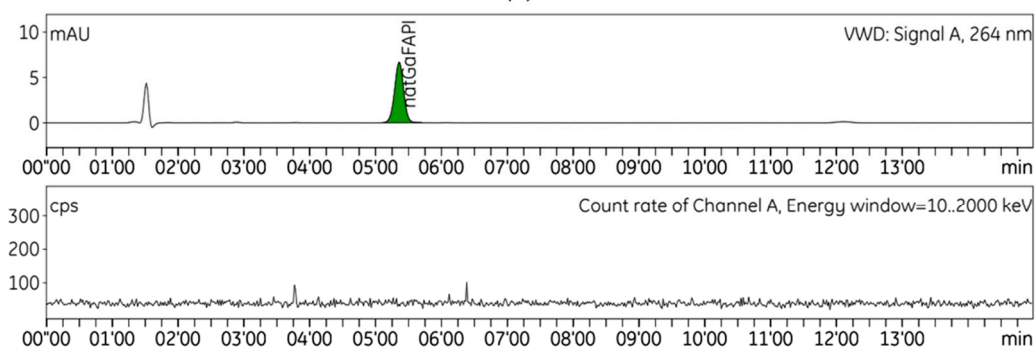
Injection	Area of [⁶⁸ Ga]GaFAPI-46 (%)
[⁶⁸ Ga]GaFAPI-46	99.94
[⁶⁸ Ga]GaFAPI-46	99.91
[⁶⁸ Ga]GaFAPI-46	99.78
[⁶⁸ Ga]GaFAPI-46	99.88
[⁶⁸ Ga]GaFAPI-46	99.94
[⁶⁸ Ga]GaFAPI-46	99.63
%RSD	0.12

Table S3. Repeatability results of radioTLC method for ethanol content in [^{68}Ga]GaFAPI-46.

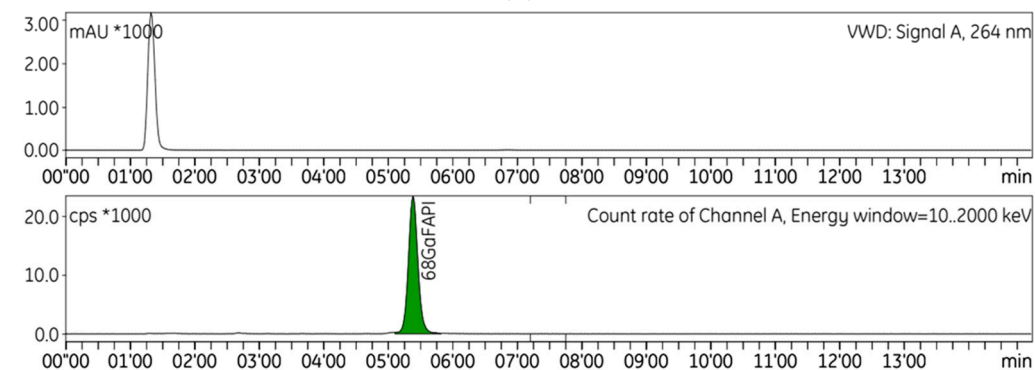
Injection	Area of [^{68}Ga]GaFAPI-46 (%)
[^{68}Ga]GaFAPI-46	2491.00
[^{68}Ga]GaFAPI-46	2341.50
[^{68}Ga]GaFAPI-46	2529.10
[^{68}Ga]GaFAPI-46	2589.40
[^{68}Ga]GaFAPI-46	2594.40
[^{68}Ga]GaFAPI-46	2589.30
%RSD	3.88



(a)



(b)



(c)

Figure S1. Representative HPLC chromatograms of each solution: (a) [^{68}Ga]GaCl₃, (b) [^{nat}Ga]GaFAPI-46, and (c) [^{68}Ga]GaFAPI-46.

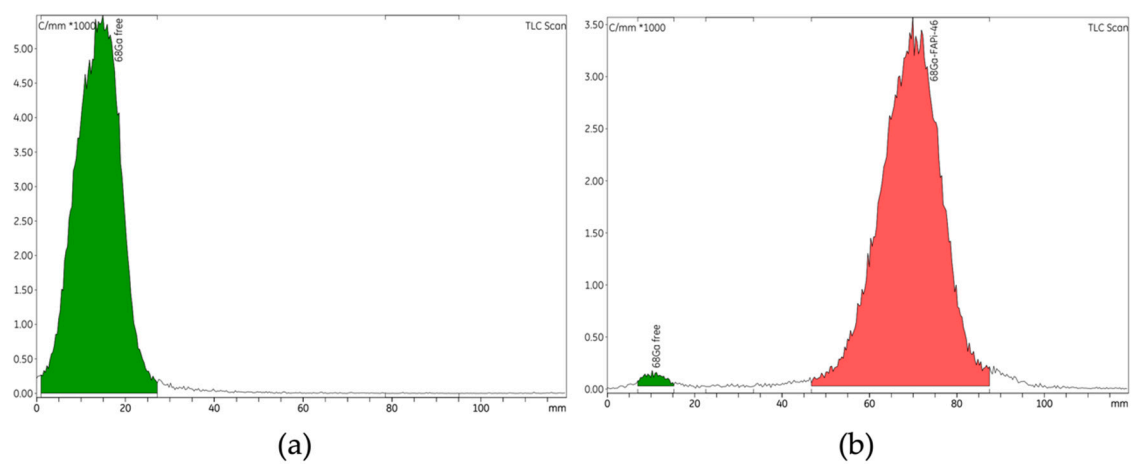


Figure S2. Representative radioTLC chromatograms of each solution: (a) $[^{68}\text{Ga}]\text{GaCl}_3$ and (b) $[^{68}\text{Ga}]\text{GaFAP-46}$.

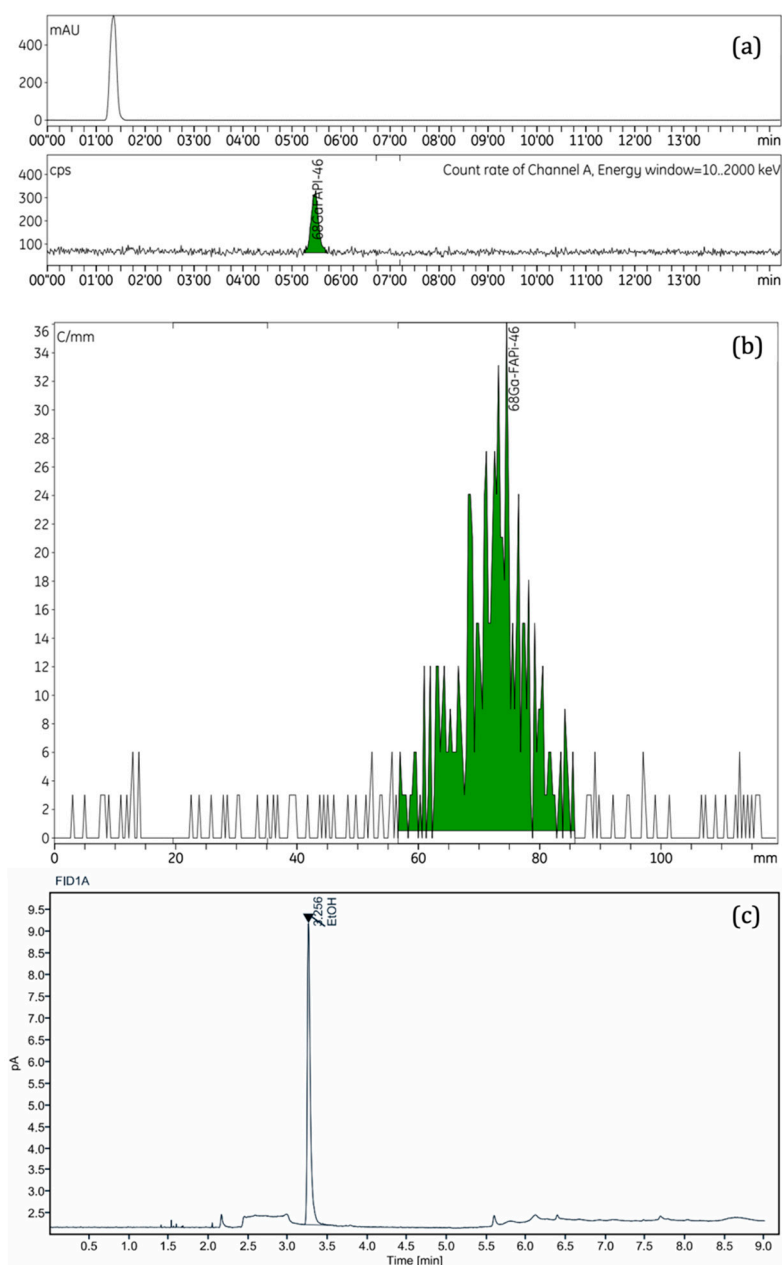


Figure S3. LOQ Representative chromatograms of HPLC, TLC and GC methods.

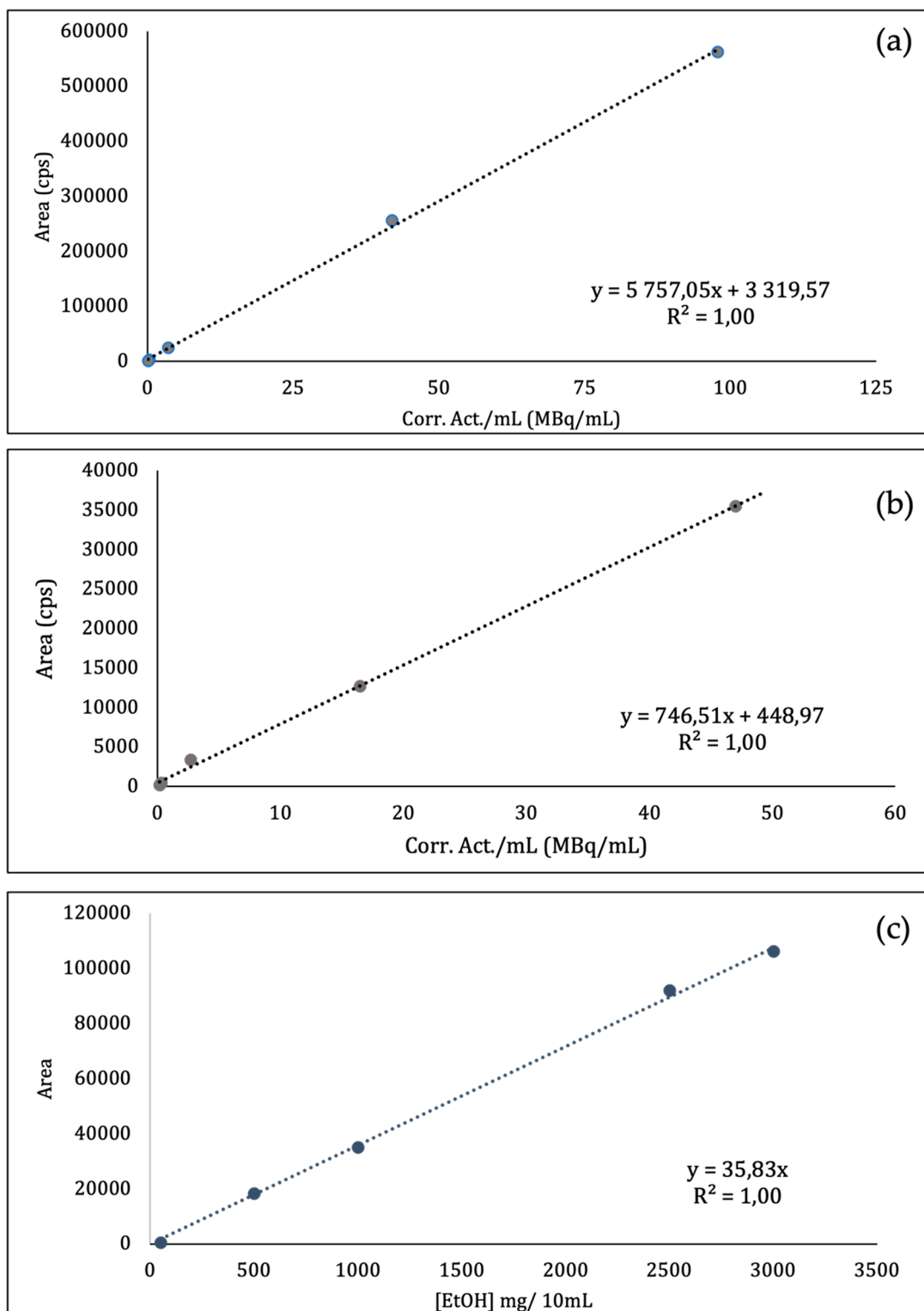


Figure S4. Linearity plot of (a) HPLC, (B) TLC and (C) GC methods.