Tables:

Table 1: Effect of the interfering agents concentration on the selectivity of the NRD photo probe for TYR

Interfering agents			
Materials	ΔF_1 (380 nm) Quenching	ΔF_2 (610 nm) Enhancement	Recovery ± RSD %
Arginine	4	5	99.2 ± 2.66
Cysteine	4	3	99.5 ± 2.87
Glycine	2	4	98.3 ± 3.10
Histidine	6	4	98.6 ± 2.12
Lysine	5	2	99.8 ± 2.11
Phenylalanine	4	2	99.34 ± 2.98
Proline	3	6	99.45 ± 1.98
Serine	3	5	99.78 ± 2.70
Threonine	2	3	97.4 ± 4.20
Tryptophan	15	14	99.7 ± 2.12
Valine	2	3	99.4 ± 2.00
Glucose	3	4	99.8 ± 0.78
protein	2	2	99.8 ± 1.78

ΔF_1 is the difference between the fluorescence intensity of the NRD^+-TRY^- ion pair in acetonitrile in absence and in the presence of interfering species at λ_{em}= 380 nm.

ΔF_2 is the difference between the fluorescence intensity of the NRD^+-TRY^- ion pair in acetonitrile in absence and in the presence of interfering species at λ_{em}= 610 nm.

Table 2. Sensitivity and regression parameters for photo probe.

Parameter	values
λ_{em}, nm	610
Linear range, mol L^{-1}	$1 \times 10^{-5} - 5 \times 10^{-9}$
Limit of detection (LOD), mol L^{-1}	2.7×10^{-9}
Limit of quantification (LOQ), mol L^{-1}	8.9×10^{-9}
Regression equation, Y*	
Intercept (a)	15.05
Slope (b)	6.4×10^{9}
Standard deviation	0.053
Variance (Sa^2)	2.8×10^{-3}
Regression coefficient (r)	0.993

*Y=a+bX, Where Y is luminescence intensity, X is concentration in n mol L^{-1} , a is intercept, b is slope.

Table 3: Comparison of NRD photo probe method with different methods of the determination of (TYR)

Sample (TYR)	**Method**	**Linear range (mol L^{-1})**	**Detection limit (mol L^{-1})**	**References**
Compound amino acid injection	Microcolumn electrophoresis	0.60–90 mol L^{-1}	0.20 mol L^{-1}	[21]
Serum	UV spectrophotometrically	0–64 mol L^{-1}	5 mol L^{-1}	[22]
Urine	HPLC–APCI–MS/MS	0.03–10 mol L^{-1}	0.025 mol L^{-1}	[23]
Pharmaceutical	Cyclic voltammetry	1×10^{-7} to 5×10^{-5} mol L^{-1}	8×10^{-8} mol L^{-1}	[24]
Serum and urine samples	Spectrofluorimetry	1.1×10^{-7} to 1.1×10^{-5} mol L^{-1}	6.8×10^{-8} mol L^{-1}	[25]
Spirulina and food samples	Spectrofluorimetry	0.3–20.0 gm L^{-1}	0.094 gm L^{-1}	[26]
Pharmaceutical and serum samples	NRD Photo Probe	$1 \times 10^{-5} – 5 \times 10^{-9}$ mol L^{-1}	2.7×10^{-9} mol L^{-1}	Present work

Table 4. Evaluation of intra-day and inter-day accuracy and precision**.**

Method	TYR taken*	Intra-day accuracy and precision (n=3)			Inter-day accuracy and precision (n=3)		
		TYR Average Found* ±CL	%RE	%RSD	TYR average found* ±CL	%RE	%RSD
Tyrosine, USA	3.0	3.07 ± 0.07	2.33	0.007	3.11± 0.27	2.75	0.036
	6.0	5.97 ± 0.05	0.50	0.006	6.08± 0.19	1.33	0.013
	9.0	8.92 ± 0.09	0.88	0.002	9.09± 0.22	1.00	0.010
Serum sample	4.0	3.99 ± 0.20	0.25	0.02	4.08± 0.20	2.00	0.020
	6.0	5.98 ± 0.15	0.33	0.01	6.09± 0.22	1.50	0.015
	9.0	8.97 ± 0.22	0.33	0.01	9.12± 0.29	1.33	0.013

.The values are mulitiplied by 10^{-7} mol L^{-1} for method*

RE. Percent relative error, %RSD. relative standard deviation and CL. Confidence limits were calculated % from: CL = ± tS/√n. (The tabulated value of t is 4.303, at the 95% confidence level; S = standard deviation and .(n = number of measurements

Table 5: Determination of (TYR) in pharmaceutical and serum preparations using NRD^{+}-TYR^{-} photo probe.

Drug	Taken (x 10^{-7} M)	Found (x 10^{-7} M)	Average*	Average recovery ± R.S.D. (%)	B.P. (LC)
Tyrosine, USA	3.0 6.0 9.0	3.08, 3.05, 3.10 6.02, 5.94, 5.96 8.91, 8.92, 8.94	3.07 5.97 8.92	102.3 ± 0.007 99.5 ± 0.006 99.1 ±0.002	99.7± 0.055
Serum sample	4.0 6.0 9.0	3.94, 3.97, 4.08 6.01, 6.05, 5.90 8.91, 8.91, 9.10	3.99 5.98 8.97	99.75 ±0.02 99.66± 0.01 99.66 ±0.01	99.5± 0.050

***Average of nine measurements.**