antioxidants

MDPI

Supplementary Materials

Dysmetabolisms can affect Total Antioxidant Capacity (TAC) of human plasma: determination of reference intervals of TAC by way of CUPRAC-BCS method

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Preliminary statistical treatment

Table S1. D'Agostino-Pearson normality test.

Statistics[a]	Male	Female
n	261	152
g1	-0.209	0.073
g2	0.114	-0.100
Z_1(g1)	-0.846	0.290
Z_2(g2)	0.505	0.418
K^2	0.971	0.259
Degree of freedom	2	2
p-value	0.615	0.878

[a] *n* is the number of observations, g1 is the sample skewness, g2 is the sample kurtosis, Z_1(g1) is the standard normal deviate of sample skewness, Z_2(g2) is the standard normal deviate of sample kurtosis and $K^2 = (Z_1(g1))^2 + (Z_2(g2))^2$ is the statistic criterion and if the null hypothesis of normality is true, then K^2 is approximately χ^2-distributed with 2 degrees of freedom.
Being both p-value > 0.05, it was possible to confirm the Gaussian distribution of the two subgroups.

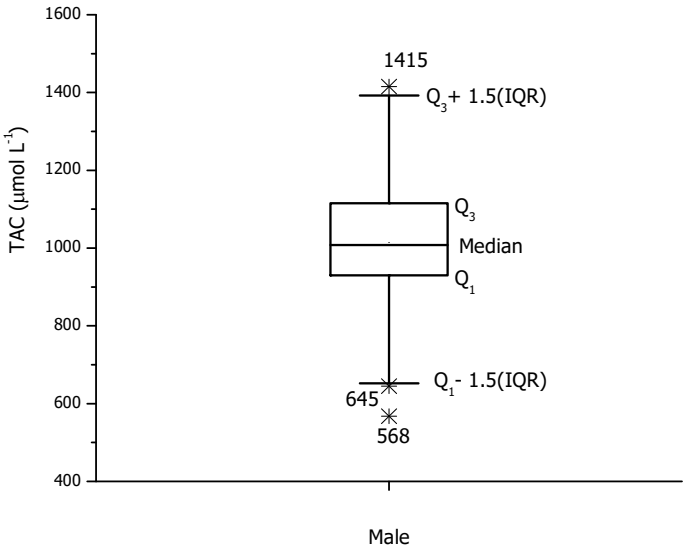

Figure S1. Box-and-whisker plot of male subgroup for the inspection of the outliers (plotted with an asterisk).

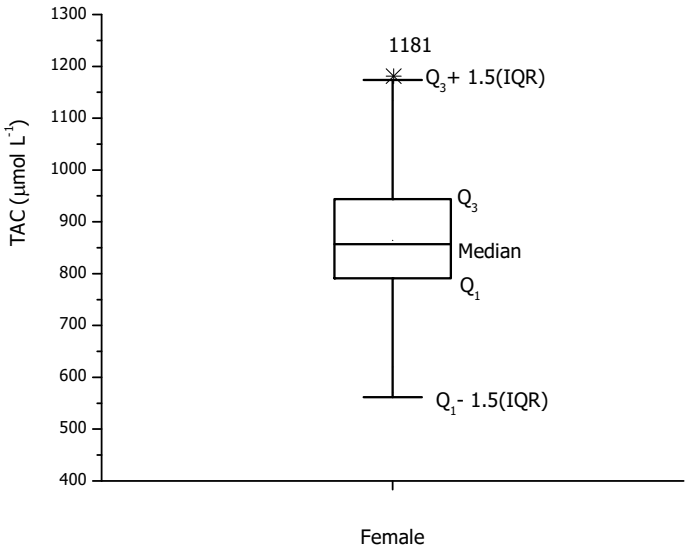

Figure S2. Box-and-whisker plot of female subgroup for the inspection of the outliers (plotted with an asterisk).

Table S2. Descriptive statistic (TAC values, μmol L^{-1}) for healthy and pathological subgroups.

Subgroup	n	Median	Mean	St. dev.	Min	Max	25 percentiles	75 percentiles	Age[a]
Descriptive statistic on original dataset of healthy donors (n = 413)									
Male	261	1008	1015	143	568	1415	929	1115	19 – 65
Female	152	856	864	115	571	1181	787	944	19 – 62
Descriptive statistic on dataset of healthy donors with outlier removal (n = 409)									
Male	258	1008	1016	137	679	1379	930	1115	19 – 65
Female	151	856	862	113	571	1136	786	944	19 – 62
Descriptive statistic on for hyperuricemic patients									
Male	54	1275	1288	91	1057	1555	1239	1333	-
Descriptive statistic on for hyperbilirubinemic patients									
Male	25	1260	1389	452	857	2408	1121	1443	-
Descriptive statistic on for dialysis patients									
Pre-dialysis	50	1485	1520	344	727	2722	1382	1610	-
Post-dialysis	50	728	737	109	527	1047	659	818	-
Descriptive statistic on for diabetic patients									
Male	55	1020	1033	138	748	1296	927	1137	-
Female	38	957	973	113	750	1171	915	1054	-

[a] age expressed in years.

Table S3. Assessment of the age effect on the TAC values. Statistical parameters of male and female subgroups data subdivided into four age-intervals and the corresponding one-way ANOVA reports.

			Males		
Age interval [a]	**18 – 30**	**31 – 40**	**41 – 50**		**51 – 65**
n [b]	46	98	72		42
Mean	998	1030	998		1037
Median	984	1048	991		1015
Standard deviation	139	134	136		142
Min	684	690	679		780
Max	1379	1328	1255		1370
	ANOVA report (α =0.05)				
	Sum of squares	**Degrees of freedom**	**Variance**	**F**	**p-value**
Age intervals	$76.1 \cdot 10^3$	3	$25.4 \cdot 10^3$	1.3643	0.2530
Prediction error	$47.3 \cdot 10^5$	254	$18.6 \cdot 10^3$		
			Females		
Age interval [a]	**18 – 30**	**31 – 40**	**41 – 50**		**51 – 65**
n [b]	45	44	45		17
Mean	847	875	844		871
Median	829	885	861		875
Standard deviation	115	113	112		114
Min	637	600	571		683
Max	1113	1136	1044		1134
	ANOVA report (α =0.05)				
	Sum of squares	**Degrees of freedom**	**Variance**	**F**	**p-value**
Age intervals	$19.2 \cdot 10^3$	3	$64.1 \cdot 10^2$	0.4968	0.6894
Prediction error	$19.0 \cdot 10^5$	147	$12.9 \cdot 10^3$		

[a] age interval expressed in years.

[b] *n* is the number of observations; mean, median, standard deviation, min and max are expressed in μmol L^{-1}.