

Table S1. Regression equations, linearity range, r, LOD and LOQ of all analytes.

	Regression equation	linearity range (mg/mL)	r	LOD (mg/mL)	LOQ (mg/mL)
α Punicalagin	Y = 1350.8x - 82435	0.1 - 1	0.9965	0.0985	0.0325
β Punicalagin	Y = 1445.2x - 43542	0.1 - 1	0.9995	0.0403	0.122
Gallic acid	Y = 14918x - 20485	0.06 – 0.3	0.9993	0.0133	0.0403
Ellagic acid	Y = 12135x - 785971	0.06 – 0.3	0.985	0.0673	0.204

Table S2. Comparative evaluation of polyphenolic, flavonoid and anthocyanin content of peels and aril extracts of Sefri and various pomegranate (*Punica granatum*) cultivars.

Plant Extract	Polyphenols (mg GAE/g dw)	Flavonoids (mg QE/g dw)	Total Anthocyanin (mg cy-3-glu/100g dw)	α-Punicalagin (mg/g dw)	β-Punicalagin (mg/g dw)	Gallic Acid (mg/g dw)	Ellagic Acid (mg/g dw)
Moroccan Sefri cultivar							
PPPE	283.86 ± 17.89	185.37 ± 3.05	102.97 ± 9.19. ns	148.95 ± 2.43	302.38 ± 7.26	5.87 ± 0.08	18.85 ± 0.41
PAPE	166.90 ± 18.10	57.43 ± 0.41	81.26 ± 18.39	40.40 ± 2.67	3.03 ± 0.44	3.88 ± 0.04	14.43 ± 0.21
Tunisian Cultivar							[1. 2]
PPPE	87.33 – 109.79	44.83 – 56.46	63.76 – 80.90	--	--	1.09 - 1.31	0.34 – 0.36
PAPE	10.59 – 13.70	4.11- 5.75	28.15 – 48.27	--	--	0.137 – 0.205	0.22 – 0.24
Iranian cultivar							[3. 4]
PPPE	98.24 - 250.13	18.61 - 36.4	3.95 – 29.52 (mg Cat/g)	--	--	--	--
PAPE	11.62 – 21.03	0.84 – 2.14	1.6 – 3.89 (mg Cat/g)	--	--	--	--
Turkish cultivar							[5. 6]
PPPE	126.11 - 212.48	9.44 - 20.52	20 – 800 mg/L	--	--	--	--
PAPE	4.22 – 9.20	1.97 – 3.97	20 – 350 mg/L	-	--	--	--
Italian cultivar							[7-10]
PPPE	237.7 – 612.7	0.471 – 0.881 mmol RE/g	28.45 - 32.68 μmolC3G/g	1.3 – 183.8	0.3 – 325.1	--	0.6 – 40.1
PAPE	28.39 – 103.01 mgGAE/L	29.44 – 75.15 mg/L	58.49 – 198.06 mg CE/L	--	- 165.26	4.27 -53.2 mg/L	11.22 – 41.40 mg/L
Spanish cultivar							[11-14]
PPPE	- 161	6.32 – 13.27 mg RE/g	- 53.52	113 - 148	74 - 107	--	13 -16.7
PAPE	141.29 – 172.5	4.77 – 18.9 mgQE/L	34.2 – 655.8 mg/L	0.3-10.3 mg/L	1-31.4 mg/L	--	4.9-152.8 mg/L