

Supplementary information

Potential bioaccessibility and bioavailability of polyphenols and functional properties of tiger nut beverage and by-product during *in vitro* digestion

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Table S1. Retention times and LOD-LOQ of identified polyphenols by HPLC UV/VIS.

Polyphenol	Retention time (min)	LOD (mg/mL)	LOQ (mg/mL)
Caffeic acid hexoside	3.8	0.03	0.09
Ferulic acid acyl-b-D-glucoside	5.1	0.05	0.1
Protocatechuic acid	5.8	0.1	0.3
3-Hydroxybenzoic acid	9.7	0.05	0.1
4-Hydroxybenzoic acid	10.3	0.05	0.1
Vanillic acid	11.4	0.05	0.12
<i>p</i>-Coumaric acid	15.6	0.02	0.06
<i>Trans</i>-ferulic acid	16.6	0.05	0.1
Epicatechin derivative	17.4	0.03	0.09
Ethyl vanillin	17.8	0.05	0.12
Luteolin	26.7	0.05	0.1
<i>Trans</i>-cinnamic acid	28.8	0.001	0.003

LOD: Limit of detection; LOQ: Limit of quantification

Table S2. Acquisition parameters used for the LC-MS/MS analysis of polyphenols.

Polyphenol	Precursor ions [M-H]⁻ (m/z)	Product ions [M-H]⁻ (m/z)	RT (min)	CE	DP	CXP
Caffeic acid hexoside	341	179, 135	3.5	-25	-50	-7
Ferulic Acid Acyl-b-D-glucoside	355	191	6.5	-25	-50	-15
Protocatechuic acid	153	109	7.1	-21	-40	-11
3-Hydroxybenzoic acid	137	93	9.7	-20	-35	-7
4-Hydroxybenzoic acid	137	93	9.7	-20	-35	-7
Vanillic acid	167	152,108	10.2	-18	-40	-7
p-Coumaric acid	163	119, 113	13.3	-24	-40	-6
Trans-ferulic acid	193	134, 178	14.2	-22	-40	-13
Epicatechin derivative	289	245	15.1	-20	-50	-12
Ethyl vanillin	165	152, 137	15.4	-20	-40	-15
Luteolin	285	133, 151	24.4	-44	-50	-15
Trans-cinnamic acid	147	103	25.8	-25	-60	-7

RT: Retention time; CE: Collision energy; DP : Declustering potential; CXP: Collision-cell exit potential.

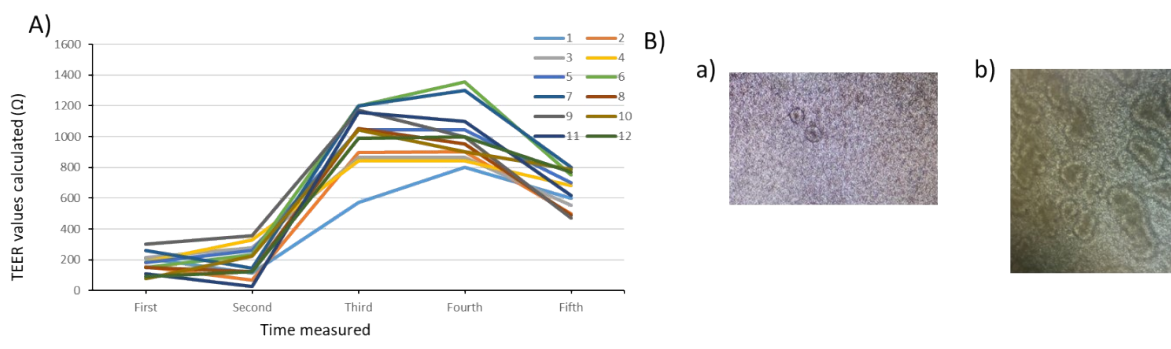
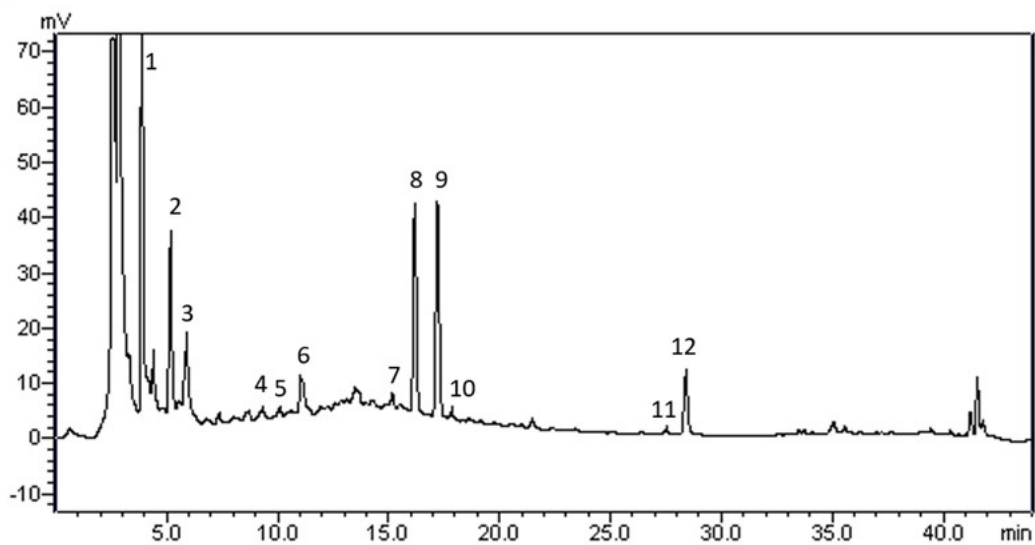


Fig. S1. A) TEER values (Ω) obtained in different days during the differentiation period and per well. Graph reports measurements for two plates and for 5 times selected from the fourteen days for complete domes formation. B) Images of dome formation after 5 days of seeding cells in transwell (a) and the day of the experiment (b).

a.



b.

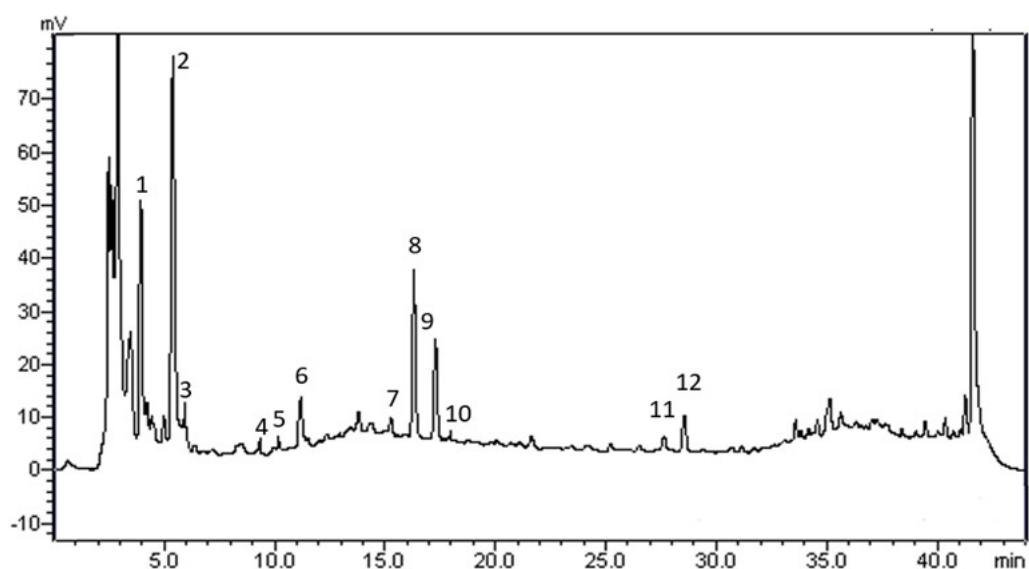


Fig. S2. Typical HPLC-UV/VIS chromatogram obtained from the analysis of polyphenols from **a.** TNB **b.** and TNBP.

Peak 1–Caffeic acid hexoside; peak 2–Ferulic Acid Acyl-b-D-glucoside; peak 3–Protocatechuic acid; peak 4–3-Hydroxybenzoic acid; peak 5–4-Hydroxybenzoic acid; peak 6–Vanillic acid; peak 7–p-Coumaric acid; peak 8–*Trans*-ferulic acid; peak 9–Epicatechin derivative; peak 10–Ethyl vanillin; peak 11–Luteolin; peak 12–*Trans*-cinnamic acid