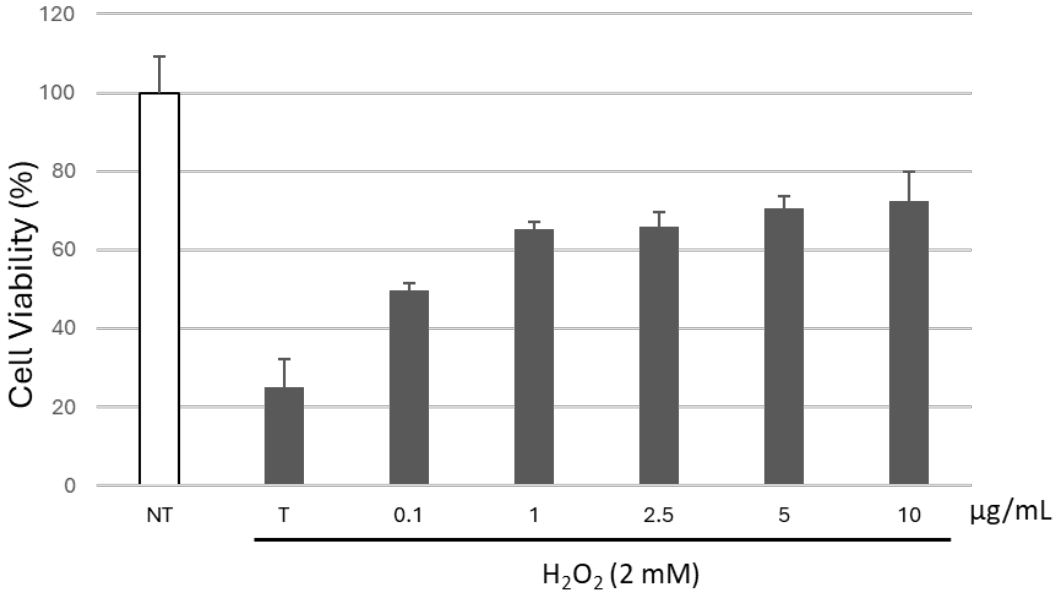
Figure S1. MTT assay of cells pre-treated with extract and exposed to oxidative stress. Cells were treated with different concentrations of the extract for 24 h, followed by exposure to H_2O_2 (2 mM) for 1 h. Cell viability was then determined using the MTT assay. NT: non-treated cells; T: cells treated with H_2O_2 only. Data are expressed as a percentage of control. Data represent the mean (± standard deviation) of six independent experiments. All samples are significantly different compared to both NT and T samples ($p < 0.001$).



NT = non-treated cells
T = cells treated with H_2O_2 only.

Table S1. Compounds identification by (HR) LC-ESI-QTOF MS/MS in *R. ulmifolius* fruits extract.

Compound n°	Rt min	Identity	$[M-H]^-$ *m/z*	$[M+H]^+$ *m/z*	Molecular formula	Δ ppm	MS/MS* *m/z*	References	Level#
1	4.53	protocatechuic acid	153.0443		$C_7H_6O_4$	6.88	153.0443(100)	[1,2]	1
2	6.44	chlorogenic acid	353.110		$C_{16}H_{18}O_9$	-1.11	191.0777(100)	[3,4]	1
3	9.81	cyanidin-3-*O*-glucoside		449.1082	$C_{21}H_{21}O_{11}^+$	-0.19	287.0548(100)	[3–5]	1
4	10.9	pelargonidin-3-*O*-glucoside		433.1114	$C_{21}H_{21}O_{10}^+$	-0.49	271.5544(100)	[3–5]	2
5	12.07	cyanidin-3-*O*-xyloside		419.0972	$C_{20}H_{19}O_{10}^+$	-0.44	287.0546(100)	[3–5]	2
6	12.76	cyanidin-3-*O*-dioxalyl-glucoside		593.2197	$C_{21}H_{28}O_{15}^+$	0.36	287.0547(100)	[3–5]	2
7	16.74	ellagic acid pentoside	433.0634		$C_{19}H_{14}O_{12}$	-0.41	301.0186(100)/300.0116(30)	[5]	2
8	17.42	quercetin-3-*O*-rhamnoside	447.0774		$C_{21}H_{20}O_{11}$	-1.42	300.0128(100)/301.0196(75)	[3,4]	1
9	18.42	ellagic acid glucuronide	477.0849		$C_{20}H_{14}O_{14}$	0.04	301.0560(100)	[5]	2
10	19.51	quercetin-HMG-glucoside	607.1422		$C_{27}H_{18}O_{16}$	-1.91	300.0404(100)/301.0549(49)	[3–6]	2
11	20.24	kaempferol derivative	447.1114		$C_{21}H_{20}O_{11}$	-1.65	255.0539(100)/284.0536(80)/285.05978(17)	[6–8]	3
12	28.80	kaempferol 3-*O*-rutinoside	593.1423		$C_{27}H_{30}O_{15}$	1.56	284.0541(100)/285.0603(65)	[3,4]	1

* In parenthesis the relative intensity; # according to Blaženović et al. [9]

References

1. Liu, W.; Nisar, M.F.; Wan, C. Characterization of Phenolic Constituents from *Prunus cerasifera* Ldb Leaves. *J Chem* **2020**, *2020*, 5976090, doi:10.1155/2020/5976090.

2. Truong, X.T.; Park, S.H.; Lee, Y.G.; Jeong, H.Y.; Moon, J.H.; Jeon, T. Il Protocatechuic Acid from Pear Inhibits Melanogenesis in Melanoma Cells. *Int J Mol Sci* **2017**, *18*, doi:10.3390/ijms18081809.

3. Candela, R.G.; Lazzara, G.; Piacente, S.; Bruno, M.; Cavallaro, G.; Badalamenti, N. Conversion of Organic Dyes into Pigments: Extraction of Flavonoids from Blackberries (*Rubus ulmifolius*) and Stabilization. *Molecules* **2021**, *26*, doi:10.3390/molecules26206278.

4. Loizzo, M.R.; Tundis, R.; Leporini, M.; D'urso, G.; Candela, R.G.; Falco, T.; Piacente, S.; Bruno, M.; Sottile, F. Almond (*Prunus dulcis* cv. *casteltermini*) Skin Confectionery By-Products: New Opportunity for the Development of a Functional Blackberry (*Rubus ulmifolius* Schott) Jam. *Antioxidants (Basel)* **2021**, *10*, doi:10.3390/antiox10081218.

5. da Silva, L.P.; Pereira, E.; Pires, T.C.S.P.; Alves, M.J.; Pereira, O.R.; Barros, L.; Ferreira, I.C.F.R. *Rubus ulmifolius* Schott Fruits: A Detailed Study of Its Nutritional, Chemical and Bioactive Properties. *Food Res Int* **2019**, *119*, 34–43, doi:10.1016/J.FOODRES.2019.01.052.

6. Pavlović, A. V.; Papetti, A.; Zagorac, D.Č.D.; Gašić, U.M.; Mišić, D.M.; Tešić, Ž.L.; Natić, M.M. Phenolics Composition of Leaf Extracts of Raspberry and Blackberry Cultivars Grown in Serbia. *Ind Crops Prod* **2016**, *87*, 304–314, doi:10.1016/j.indcrop.2016.04.052.

7. Kashchenko, N.I.; Olennikov, D.N. Phenolome of Asian Agrimony Tea (*Agrimonia asiatica* Juz., Rosaceae): LC-MS Profile, α-Glucosidase Inhibitory Potential and Stability. *Foods 2020, Vol. 9, Page 1348* **2020**, *9*, 1348, doi:10.3390/foods9101348.

8. Renai, L.; Scordo, C.V.A.; Chiuminatto, U.; Ulaszewska, M.; Giordani, E.; Petrucci, W.A.; Tozzi, F.; Nin, S.; Bubba, M. Del Liquid Chromatographic Quadrupole Time-of-Flight Mass Spectrometric Untargeted Profiling of (Poly)Phenolic Compounds in *Rubus idaeus* L. and *Rubus occidentalis* L. Fruits and Their Comparative Evaluation. *Antioxidants* **2021**, *10*, 704, doi:10.3390/antiox10050704.

9. Blaženović, I.; Kind, T.; Ji, J.; Fiehn, O. Software Tools and Approaches for Compound Identification of LC-MS/MS Data in Metabolomics. *Metabolites* **2018**, *8*, doi:10.3390/metabo8020031.