

Supplementary Table S1: Chromatographic and tandem mass spectrometric (LC–MS/MS) parameters, including precursor ion (m/z), product ions (m/z), collision energy (CE), retention time (RT), calibration equations ($Y = ax + b$), coefficient of determination (R^2), linearity ranges, limit of detection (LOD), and limit of quantification (LOQ) for selected phenolic compounds.

Phenolic compound	Supplier, catalog number, purity	Mode	Precursor (m/z)	Fragmentor voltage (V)	Product ions (m/z)	CE (eV)	RT/min	Y=ax + b		R^2	Linearity range (µg/mL)	LOD (µg/mL)	LOQ (µg/mL)
								a	b				
2,5-dihydroxybenzoic acid (2,5-DHBA)	Cayman Chemical, 27615, ≥98%	-	152.8	100	107.8*	20	5.20	26643.1821	-15.5984	0.9969	0.010-2.500	0.0038	0.0116
					52.9	20							
3,4-dihydroxybenzoic acid (3,4-DHBA)	Cayman Chemical, 14916, ≥98%	-	152.8	90	108.8	10	4.32	28778.2033	-1.5241	0.9954	0.010-2.500	0.0015	0.0104
					90.6	26							
					80.8	20							
gallic acid	Cayman Chemical, 11846, ≥98%	-	168.8	100	124.7 78.6	10 22	2.27	22107.7974	-209.7625	0.9946	0.050-2.500	0.0051	0.0155
3-hydroxytyrosol	Cayman Chemical, 70604, ≥98%	-	152.9	90	122.7 92.6	10 10	4.30	13457.5696	72.5948	0.9960	0.050-1.000	0.0094	0.0283
tyrosol	Cayman Chemical, 27600, ≥98%	-	136.8	80	122.7 92.6	10 14	5.25	2213.7469	69.0223	0.9923	0.100-1.000	0.0425	0.1290
p-hydroxybenzoic acid (pHBA)	Cayman Chemical, 27468, ≥98%	-	136.8	80	92.7 64.8	12 34	5.18	6304.3161	9.4383	0.9921	0.050-1.000	0.0162	0.0492
p-coumaric acid	Cayman Chemical, 20929, ≥98%	-	162.9	90	118.8 92.6	10 34	6.74	32494.0599	46.2026	0.9972	0.010-2.500	0.0034	0.0105
oleuropein	Cayman Chemical, 21220, ≥98%	-	538.9	200	377.3 307.3 275.1	12 18 18	8.29	15686.3808	-13.1369	0.9902	0.005-2.500	0.0015	0.0045
apigenin	Cayman Chemical, 10010275, ≥98%	-	268.7	160	224.5 148.5 116.6	20 24 38	10.85	4450.1763	6.2924	0.9974	0.050-1.000	0.0130	0.0390
luteolin	Cayman Chemical, 10004161, ≥98%	-	284.7	200	242.8 198.8 150.7 132.7	20 24 24 36	9.64	30271.2674	75.1824	0.9961	0.010-1.000	0.0026	0.0079
quercetin	Cayman Chemical, 10005169, ≥95%	-	300.8	170	178.5 150.6	14 10	9.63	7331.6972	-27.6862	0.9959	0.010-1.000	0.0009	0.0027

Note: *Quantifier ion used for compound quantification; Y = peak area response; x = analyte concentration; a = slope of the calibration curve; b = intercept of the calibration curve

Supplementary Table S2: List of primary and secondary antibodies used for the western blot analyses.

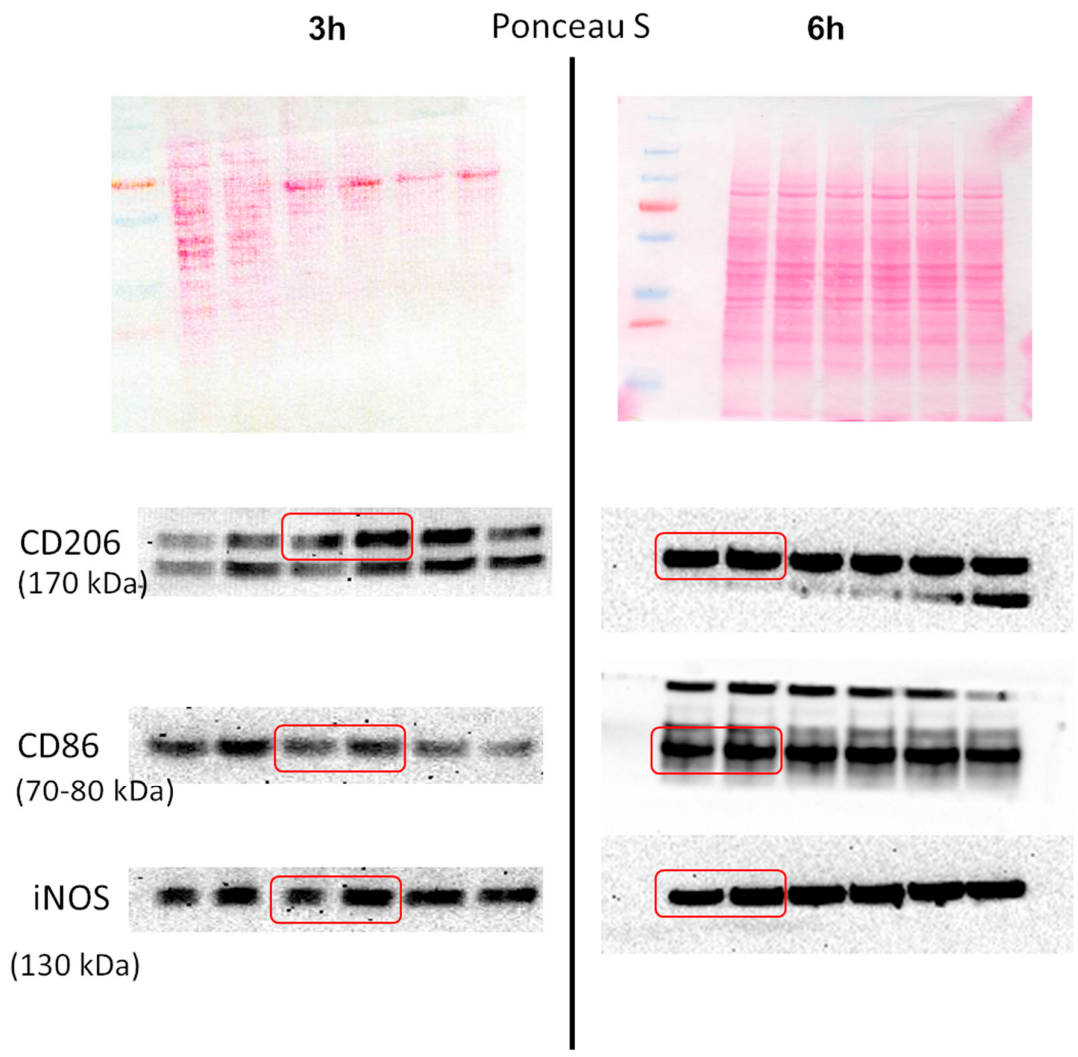
Antibodies	Dilution	Manufacturer (Reference number)
Rabbit anti-CD206	1:1000	Abcam, Cambridge, UK (ab64693)
Rabbit anti-CD86	1:3000	Abcam, Cambridge, UK (ab213044)
Rabbit anti-iNOS	1:1000	Abcam, Cambridge, UK (ab3523)
Rabbit anti-SIRT	1:500	Abcam, Cambridge, UK (ab7343)
Rabbit anti- Phospho-NF-kappaB p65	1:1000	Cell Signaling Technology, Beverly, MA, USA (#3033)
Rabbit anti-Nrf2	1:500	Proteintech, Rosemont, IL, USA (16396-1-AP)
Mouse anti-HSP70	1:1000	Abcam, Cambridge, UK (ab2787)
Biotinylated goat anti-rabbit IgG	1:2000	Invitrogen, Waltham, Massachusetts, USA (65-6140)
Biotinylated goat anti-mouse IgG	1:3000	Invitrogen, Waltham, Massachusetts, USA (62-6540)

Supplementary Table S3. Complete quantitative LC–MS/MS analysis of bioactive compounds identified in olive leaf macerates (OLMs) and ethanol extracts (OLEE) of Buža, Oblica, and Leccino cultivars, expressed relative to dry weight (DW). Results are presented as mean ± standard deviation (SD) of three independent measurements.

Phenolic compound	OLMs			OLEE		
	Buža	Oblica	Leccino	Buža	Oblica	Leccino
2,5-DHBA	0.0006 ± 0.0001	0.0006 ± 0.0000*	0.0001 ± 0.0000*	0.0005 ± 0.0001	0.0005 ± 0.0001	0.0001 ± 0.0001
3,4-DHBA	0.0030 ± 0.0001	0.0029 ± 0.0002	0.0019 ± 0.0002	0.0045 ± 0.0003	0.0045 ± 0.0003	0.0046 ± 0.0006
apigenin	0.0018 ± 0.0002	0.0013 ± 0.0002	0.0020 ± 0.0003	0.0347 ± 0.0031	0.0518 ± 0.0062	0.0436 ± 0.0059
gallic acid	<LOQ	0.0016 ± 0.0002	<LOQ	0.0045 ± 0.0002	0.0037 ± 0.0003	<LOQ
hydroxytyrosol	0.0372 ± 0.0012	0.0183 ± 0.0008	0.0117 ± 0.0017	0.0539 ± 0.0011	0.0306 ± 0.0016	0.0480 ± 0.0027
luteolin	0.0071 ± 0.0002	0.0041 ± 0.0000*	0.0012 ± 0.0002	0.0713 ± 0.0014	0.0657 ± 0.0009	0.0441 ± 0.0004
<i>p</i>-coumaric acid	0.0005 ± 0.0000*	0.0006 ± 0.0000*	0.0006 ± 0.0001	<LOQ	0.0002 ± 0.0001	0.0005 ± 0.0002
<i>p</i>HBA	0.0032 ± 0.0003	0.0026 ± 0.0003	0.0008 ± 0.0001	0.0023 ± 0.0005	0.0018 ± 0.0001	<LOQ
quercetin	0.0006 ± 0.0001	0.0008 ± 0.0001	<LOQ	0.0095 ± 0.0008	0.0195 ± 0.0009	0.0023 ± 0.0003
oleuropein	0.1215 ± 0.0042	0.0512 ± 0.0015	0.0307 ± 0.0064	0.3138 ± 0.0024	0.1841 ± 0.0013	0.3644 ± 0.0053
tyrosol	0.0027 ± 0.0007	0.0017 ± 0.0006	<LOQ	<LOQ	<LOQ	<LOQ
TOTAL	0.1782 ± 0.0072	0.0857 ± 0.0039	0.0490 ± 0.0092	0.4950 ± 0.0099	0.3624 ± 0.0117	0.5075 ± 0.0154

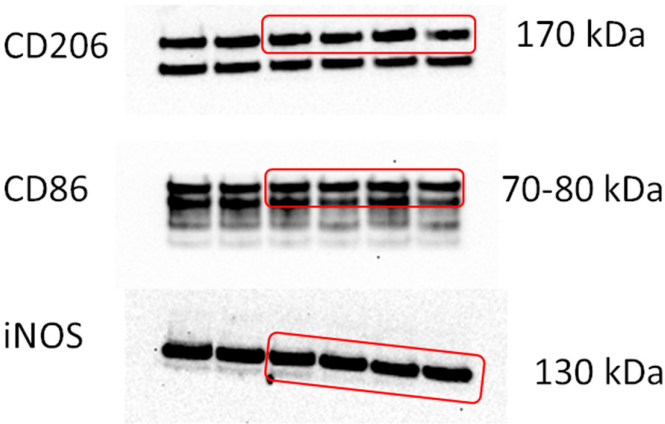
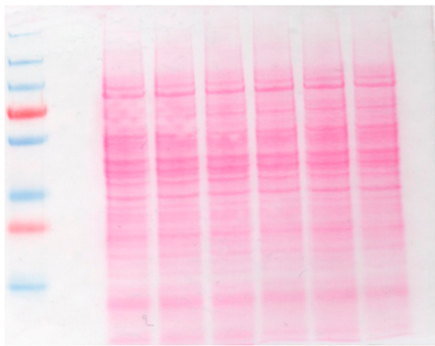
*Values reported as 0.0000 correspond to SD values below the reporting precision after rounding to four decimal places

Supplementary Figure S1: The original image of the Western blot experiments Western blot experiments in Figure 4 with scans of the Ponceau S staining of the membranes (protein loading control). The bands within the red box were presented in Figure 4.

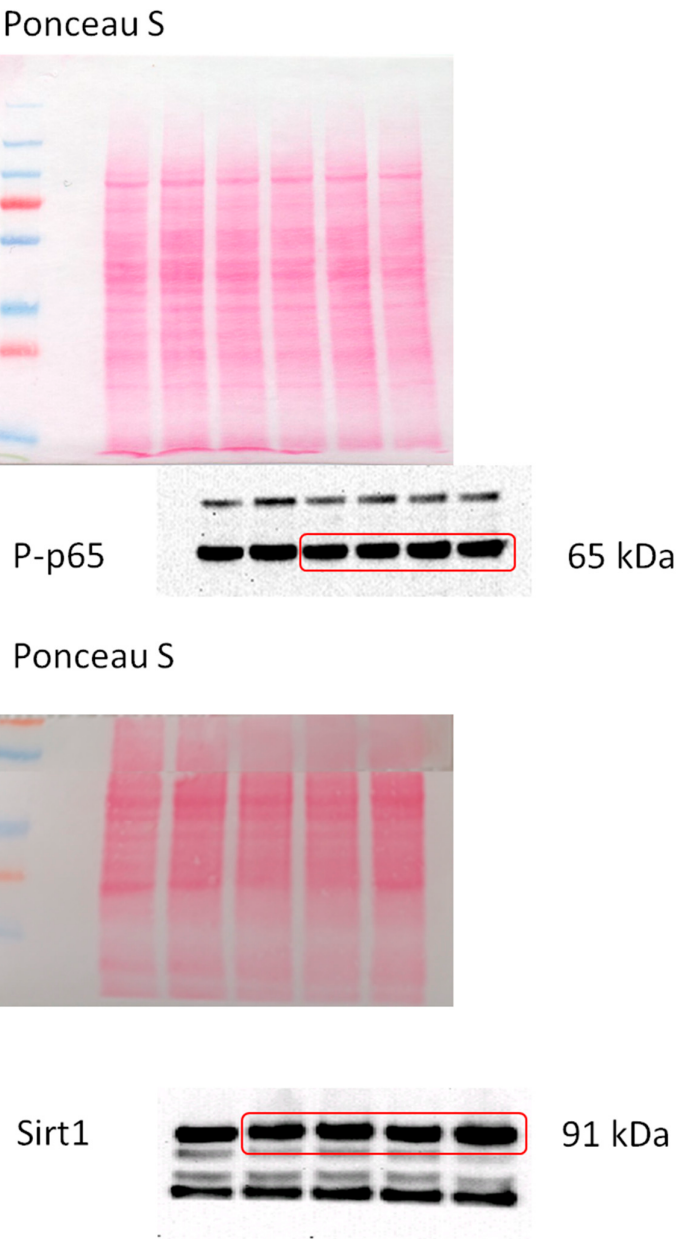


Supplementary Figure S2: The original image of the Western blot experiments Western blot experiments in Figure 5 with scans of the Ponceau S staining of the membranes (protein loading control). The bands within the red box were presented in Figure 5.

Ponceau S



Supplementary Figure S3: The original image of the Western blot experiments in Figure 6 with scans of the Ponceau S staining of the membranes (protein loading control). The bands within the red box were presented in Figure 6.



Supplementary Figure S4: The original image of the Western blot experiments Western blot experiments in Figure 7 with scans of the Ponceau S staining of the membranes (protein loading control). The bands within the red box were presented in Figure 7.

