# Antioxidant Capacity of Free and Bound Phenolics from Olive Leaves: In Vitro and In Vivo Responses

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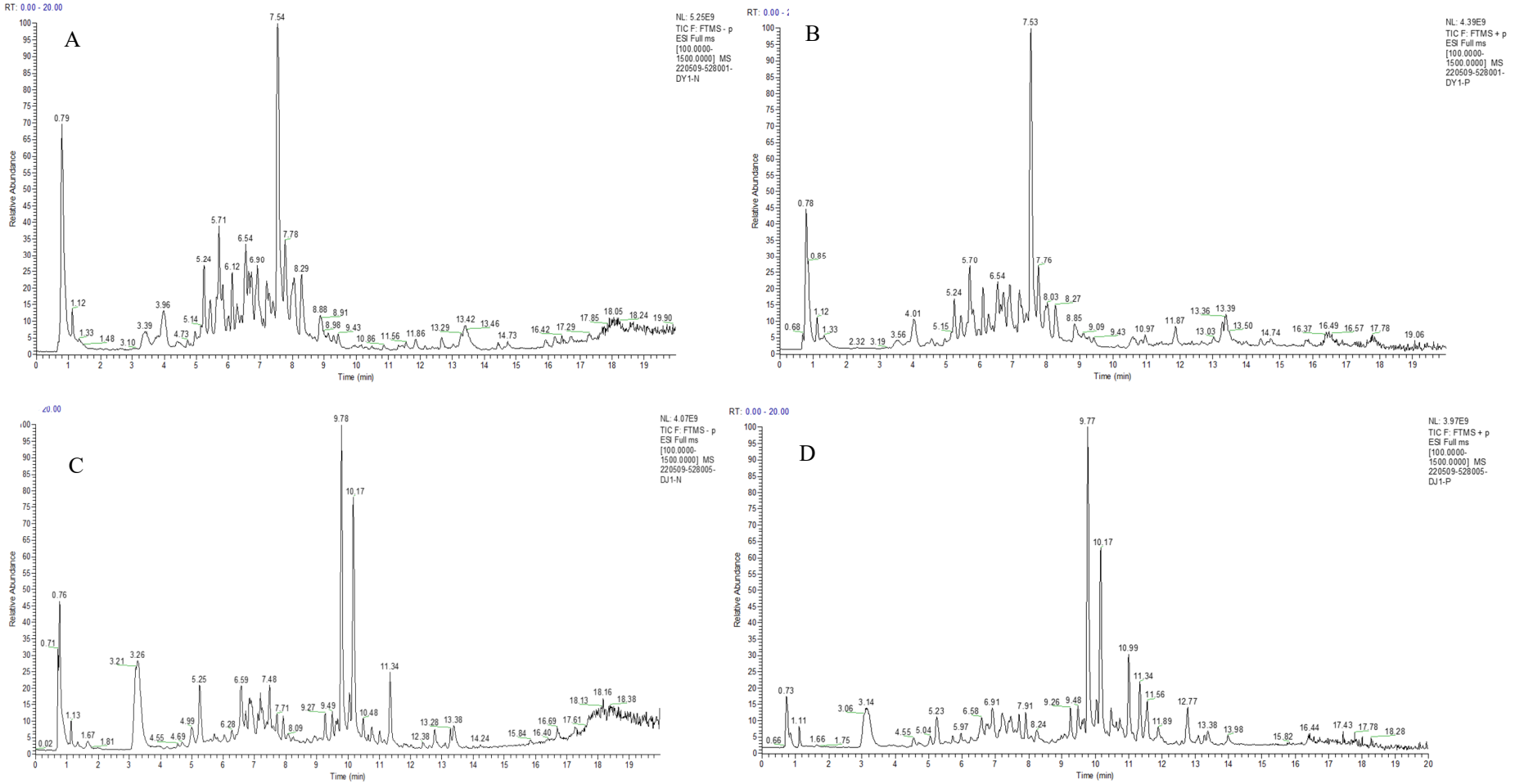


**Figure S1.** Total ion chromatogram (TIC) of free and bound phenolics fractions in olive leaves for negative ion and positive ion mode UPLC-Q-Exactive Orbitrap-MS. (A-B) FPs in negative and positive ion mode; (C-D) BPs in negative and positive ion mode.

Table S1. Calibration curves used for HPLC quantification.

| No. | Calibration curves | $R^2$ | Linear range (μg/mL) | Compounds |
|---|---|---|---|---|
| 1 | y = 4389.8x + 2982.5 | 0.9988 | 10-200 | Asiatic acid |
| 2 | y = 3946.9x + 1015.3 | 0.9992 | 12-240 | Maslinic acid |
| 3 | y = 3588.9x + 8597.6 | 0.9989 | 10-200 | Corosolic acid |
| 4 | y = 5122.4x + 2077.2 | 0.9992 | 10-200 | Oleanolic acid |
| 5 | y = 4409.7x + 3699.8 | 0.9986 | 10-200 | Ursolic acid |
| 6 | y = 19133x - 30576 | 0.9997 | 10-200 | Chlorogenic acid |
| 7 | y = 41220x - 584378 | 0.9890 | 24-480 | Caffeic acid |
| 8 | y = 68816x - 581501 | 0.9901 | 15-300 | 4-Coumaric acid |
| 9 | y = 12851x - 12745 | 0.9999 | 25-500 | Sinapinic acid |
| 10 | y = 35342x - 75709 | 0.9994 | 12-240 | Ferulic acid |
| 11 | y = 10534x - 1991 | 0.9997 | 10-200 | Hydroxytyrosol |
| 12 | y = 7341.7x - 2253.2 | 0.9997 | 10-200 | Rutin |
| 13 | y = 12430x + 12561 | 0.9995 | 10-200 | Luteolin-7-O-glucoside |
| 14 | y = 11641x - 3972.8 | 0.9997 | 10-200 | Rhoifolin |
| 15 | y = 12855x - 12713 | 0.9996 | 10.5-210 | Apigenin-7-O-glucoside |
| 16 | y = 2334.1x - 1014.7 | 0.9998 | 11-220 | Oleuropein |
| 17 | y = 19079x - 15381 | 0.9998 | 10-200 | Quercetin |
| 18 | y = 13704x - 4919.6 | 0.9998 | 10-200 | Luteolin |
| 19 | y = 16509x - 6454.5 | 0.9997 | 11.5-230 | Kaempferol |

Table S2. Effect of different concentrations of $H_2O_2$ on the viability of HepG2 cells.

| | Concentration of $H_2O_2$ (μmol/mL) | Survival rate (%) |
|---|---|---|
| Control | 0 | $100\pm6.72^{A}$ |
| $H_2O_2$ | 100 | $109.48\pm8.47^{A}$ |
| $H_2O_2$ | 200 | $109.08\pm11.64^{A}$ |
| $H_2O_2$ | 400 | $102.95\pm10.93^{A}$ |
| $H_2O_2$ | 800 | $59.99\pm6.51^{B}$ |
| $H_2O_2$ | 1200 | $38.75\pm7.52^{C}$ |
| $H_2O_2$ | 1600 | $22.52\pm2.13^{D}$ |
| $H_2O_2$ | 3200 | $7.86\pm9.09^{D}$ |

Table S3. Effect of the incubation time of $H_2O_2$ on the viability of HepG2 cells.

| | Time (h) | Survival rate (%) |
|---|---|---|
| $H_2O_2$ (800 μmol/mL) | 1 | $113.18\pm14.65^{A}$ |
| $H_2O_2$ (800 μmol/mL) | 2 | $93.51\pm13.06^{AB}$ |
| $H_2O_2$ (800 μmol/mL) | 4 | $67.65\pm7.47^{BC}$ |
| $H_2O_2$ (800 μmol/mL) | 6 | $59.99\pm6.51^{C}$ |
| $H_2O_2$ (800 μmol/mL) | 8 | $58.12\pm9.81^{C}$ |

Table S4. Primer sequences for RT-qPCR

| Primer name | Primer sequences (5’-3’) |
|---|---|
| Gapdh-F | AACAGCAACTCCCACTCTTCC |
| Gapdh-R | TGGTCCAGGGTTTCTTACTCC |
| HO-1-F | CACATCCAAGCCGAGAATGC |
| HO-1-R | GTACAAGGAAGCCATCACCAG |
| GCLC-F | CACATCTACCACGCAGTCAAG |
| GCLC-R | CATCGCCTCCATTCAGTAACAA |
| GSTA2-F | CTTGATGCCAGCCTTCTGAC |
| GSTA2-R | TGCCAGGATGTAGGAACTTCTT |
| NQO1-F | ATGAAGGAGGCTGCTGTAGAG |
| NQO1-R | GCTAGAGATGACTCGGAAGGAT |
| Nrf2-F | CCTCAGCATGATGGACTTGGA |
| Nrf2-R | ACTTGTACCGCCTCGTCTG |