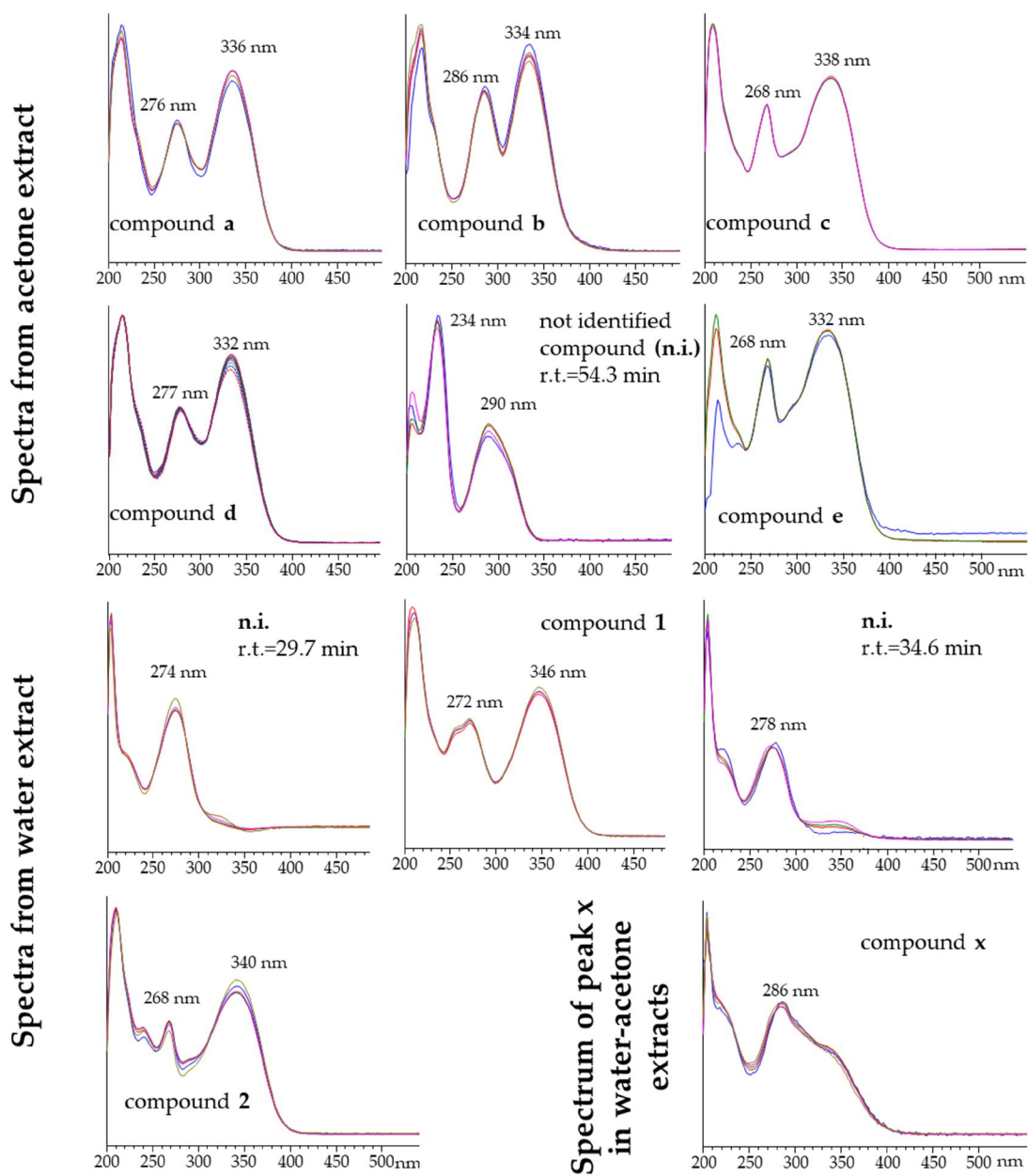


**Supplementary Table S1.** The effect of the ethanol or acetone concentration (%) and of UAE on the initial concentration ( $C_0$ ) and the rate constant ( $k$ ) of each extraction step of rosmarinic acid, total flavonoids and total phenolic diterpenes (sum of carnosic acid plus carnosol), as calculated by fitting Eq. 1. The correlation coefficients ( $R^2$ ) are also presented.

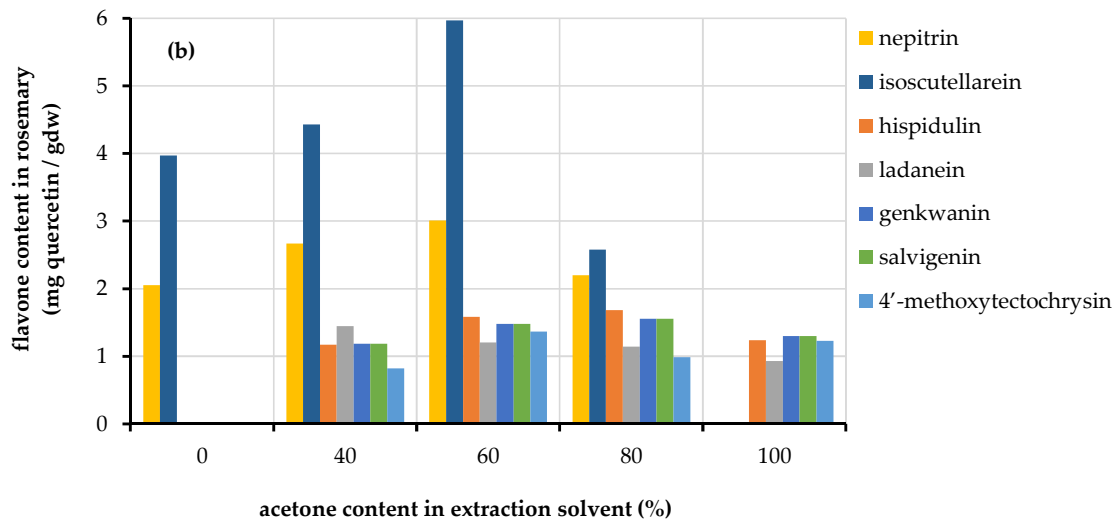
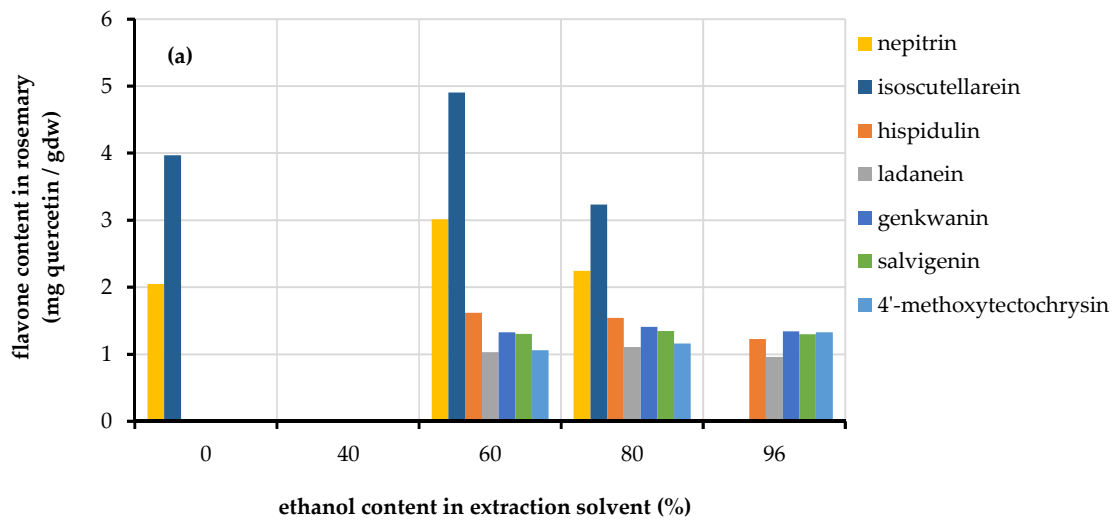
|  | Rosmarinic acid |       |       |              |       | Flavonoids   |       |       |              |       | Phenolic Diterpenes |       |       |              |       |
|--|-----------------|-------|-------|--------------|-------|--------------|-------|-------|--------------|-------|---------------------|-------|-------|--------------|-------|
|  | (fast stage)    |       |       | (slow stage) |       | (fast stage) |       |       | (slow stage) |       | (fast stage)        |       |       | (slow stage) |       |
|  | $C_0$           | $k$   | $R^2$ | $k$          | $R^2$ | $C_0$        | $k$   | $R^2$ | $k$          | $R^2$ | $C_0$               | $k$   | $R^2$ | $k$          | $R^2$ |
| <b>Ethanol concentration (%) in agitated reactor</b> |                 |       |       |              |       |              |       |       |              |       |                     |       |       |              |       |
| <b>0</b>   | 7,01            | 0,023 | 0,99  | 0,012        | 0,99  | 2,51         | 0,004 | 0,99  | 0,001        | 0,93  | n/a                 | n/a   | n/a   | n/a          | n/a   |
| <b>60</b>  | 3,27            | 0,018 | 0,99  | 0,006        | 0,98  | 1,59         | 0,015 | 0,99  | 0,010        | 0,99  | 14,73               | 0,026 | 0,94  | 0,008        | 0,97  |
| <b>80</b>  | 2,28            | 0,014 | 0,99  | 0,005        | 0,99  | 5,67         | 0,008 | 0,99  | 0,003        | 0,99  | 20,45               | 0,027 | 0,99  | 0,009        | 0,99  |
| <b>96</b>  | 0,81            | 0,004 | 0,98  | 0,001        | 0,84  | 3,76         | 0,002 | 0,99  | 0,001        | 0,99  | 19,73               | 0,025 | 0,97  | 0,007        | 0,99  |
| <b>Acetone concentration (%) in agitated reactor</b> |                 |       |       |              |       |              |       |       |              |       |                     |       |       |              |       |
| <b>0</b>   | 7,01            | 0,023 | 0,99  | 0,012        | 0,99  | 2,51         | 0,004 | 0,99  | 0,001        | 0,93  | n/a                 | n/a   | n/a   | n/a          | n/a   |
| <b>40</b>  | 4,52            | 0,020 | 0,95  | 0,007        | 0,89  | 1,21         | 0,023 | 0,99  | 0,004        | 0,99  | 4,25                | 0,009 | 0,99  | 0,004        | 0,91  |
| <b>60</b>  | 4,77            | 0,022 | 0,99  | 0,009        | 0,99  | 3,27         | 0,032 | 0,99  | 0,014        | 0,97  | 20,90               | 0,031 | 0,99  | 0,007        | 0,99  |
| <b>80</b>  | 2,29            | 0,021 | 0,99  | 0,006        | 0,96  | 2,86         | 0,028 | 0,99  | 0,009        | 0,99  | 21,70               | 0,045 | 0,99  | 0,009        | 0,87  |
| <b>100</b>   | 0,34            | 0,002 | 0,99  | 0,001        | 0,99  | 4,18         | 0,002 | 0,99  | 0,001        | 0,99  | 21,38               | 0,026 | 0,99  | 0,003        | 0,99  |
| <b>Ultrasound Assisted Extraction</b>                |                 |       |       |              |       |              |       |       |              |       |                     |       |       |              |       |
| <b>60% EtOH</b>                                      | 4,52            | 0,054 | 0,99  | 0,020        | 0,98  | 4,34         | 0,063 | 0,98  | 0,020        | 0,99  | 22,80               | 0,066 | 0,99  | 0,043        | 0,99  |
| <b>60% Acetone</b>                                   | 4,69            | 0,042 | 0,99  | 0,011        | 0,97  | 4,21         | 0,038 | 0,98  | 0,007        | 0,95  | 20,54               | 0,036 | 0,96  | 0,008        | 0,93  |
| <b>80% Acetone</b>                                   | 7,35            | 0,025 | 0,94  | 0,009        | 0,99  | 4,96         | 0,029 | 0,97  | 0,005        | 0,99  | 23,37               | 0,048 | 0,99  | 0,020        | 0,99  |

\* $C_0$  (mg/g<sub>dw</sub>)

\* $k$  (min<sup>-1</sup>)



**Supplementary Figure S1.** The UV-Vis spectra of the minor peaks detected in the chromatograms of the water, acetone 100%, and water-acetone extracts.



**Supplementary Figure S2.** The recovery of the individual identified flavones with the increase of ethanol (a) and acetone (b) in extraction solvent.