**Supplementary information**

**Identifying the biological potential of Western Balkan Polypore mushroom species to mitigate the negative effects of global mushroom cultivation**

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**Table 1S.** Relationship between EC50 values in antioxidant activities and analyzed secondary metabolite content.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Inhibition of LPx | SA•DPPH | SA•OH | FRAP | Fe2+ chelating ability |
| Inhibition of LPx | 1 | 0.68 | 0.76 | 0.57 | 0.17 |
| SA•DPPH | 0.68 | 1 | 0.62 | 0.85 | 0.23 |
| SA•OH | 0.76 | 0.62 | 1 | 0.26 | 0.26 |
| FRAP | 0.57 | 0.85 | 0.26 | 1 | 0.13 |
| Fe2+ chelating ability | 0.17 | 0.23 | -0.21 | 0.13 | 1 |
| TPC | -0.68 | -0.25 | -0.70 | 0.16 | -0.30 |
| Vitamin C | 0.45 | 0.35 | 0.83 | 0.17 | -0.71 |
| β-carotene | -0.74 | -0.37 | -0.40 | -0.16 | -0.69 |
| likopene | -0.56 | -0.21 | -0.11 | -0.078 | -0.85 |

Correlation coefficient(*r*)– all values are statistically significant (*P*<0.05); for absolute values of *r*, 0-0.19 is regarded as a ‘very weak’, 0.2-0.39 as a ‘weak’, 0.40-0.59 as a ‘moderate’, 0.6-0.79 as a ‘strong’, and 0.8-1 as a ‘very strong’ correlation.

**Table 2S.** Relationship between IC50 values in enzyme inhibition and analyzed secondary metabolite content

|  |  |  |
| --- | --- | --- |
|  | Tyrosinase inhibitory activity | ACE inhibitory activity |
| TPC | -0.88 | -0.71 |
| Vitamin C | 0.66 | 0.78 |
| β-carotene | -0.60 | -0.39 |
| likopen | -0.38 | -0.15 |

*r*\* – all values are statistically significant (p ≤ 0.05); for absolute values of *r*, 0-0.19 is regarded as a ‘very weak’, 0.2-0.39 as a ‘weak’, 0.40-0.59 as a ‘moderate’, 0.6-0.79 as a ‘strong’, and 0.8-1 as a ‘very strong’ correlation

**Table 3S.** Selectivity of methanol extracts in antitumor action

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SCα in the antitumour action[IC50 (normal-human cells)/IC50 (human malignant cells)] | *F.betulina* | *F. pinicola* | *G. applanatum* | *G. lucidum* | *C. versicolor* |
| MRC-5/HeLa | 1.02 | 1.33 | 1.38 | 2.20 | 1.73 |
| MRC-5/ K562 | 1.08 | 1.10 | 1.10 | 2.43 | 1.83 |
| MRC-5/MDA-MB-453 | 1.02 | 1.39 | 1.26 | 2.12 | 1.60 |
| BEAS-2B/HeLa | 0.95 | 1.21 | 1.32 | 1.83 | 1.21 |
| BEAS-2B/ K562 | 1.00 | 1.00 | 1.04 | 1.55 | 1.28 |
| BEAS-2B/ MDA-MB-453 | 0.95 | 1.26 | 1.20 | 1.35 | 1.12 |

αSelectivity coefficient

**Table 4S.** Mushroom species collected with corresponding family, habitat, sampling locations and usability. According to the map of Fig. 1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Species | Family | Habitat | Sampling location | Usability/edibility |
| *Fomitopsis betulina* | [Fomitopsidaceae](https://en.wikipedia.org/wiki/Fomitopsidaceae) | Brown rot fungi, common [bracket,](https://en.wikipedia.org/wiki/Bracket_fungus)  mainly on birch trees | 1-Divcibare, resort on the mountain Maljen (1,104 m), western Serbia;44° 5'51.68"N19°59'39.77"E | Medicinal/good |
| *Ganoderma lucidum* | Ganodermataceae | White rot fungi, on decaying hardwood trees | 2-Avala, mountain (511 m), near Belgrade, Serbia;44°41'29.93"N20°30'34.09"E | Medicinal/hard |
| *Ganoderma applanatum* | Ganodermataceae | White rot fungi, causes a rot of [heartwood](https://en.wikipedia.org/wiki/Heartwood) of deciduous and coniferous trees  | 3-village Babe,mountain Kosmaj (626 m), south of Belgrade, Serbia 44°32'4.36"N20°30'10.41"E | Medicinal/hard |
| *Fomitopsis pinicola* | [Fomitopsidaceae](https://en.wikipedia.org/wiki/Fomitopsidaceae) | Brown rot fungi, causes a [stem decay](https://en.wikipedia.org/wiki/Wood-decay_fungus) on softwood and hardwood trees | 4-Kopaonik, mountain (2,017m), national park, south Serbia43°18'13.45"N20°45'55.52"E | Medicinal/hard |
| *Coriolus versicolor* | [Polyporaceae](https://en.wikipedia.org/wiki/Polyporaceae) | White rot fungi, in groups on logs and stumps of deciduous trees | 5- Kosutnjak, a large forest area, Belgrade, Serbia44°45'37.48"N20°26'24.86"E | Medicinal/good |

**Supplementary Materials:** The following supporting information can be downloaded at: www.mdpi.com/xxx/s1, Table 1S: Relationship between EC50 values in antioxidant activities and analyzed secondary metabolite content; Table 2S: Relationship between IC50 values in enzyme inhibition and analyzed secondary metabolite content; Table 3S: Selectivity of methanol extracts in antitumor action; Table 4S: Mushroom species collected with corresponding family, habitat, sampling locations and usability. According to the map of Figure 1.

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