

## **Optimization of bioactive extraction from *Pleurotus ostreatus* by experimental design and evaluation of *in vitro* antioxidant and antimicrobial activities**

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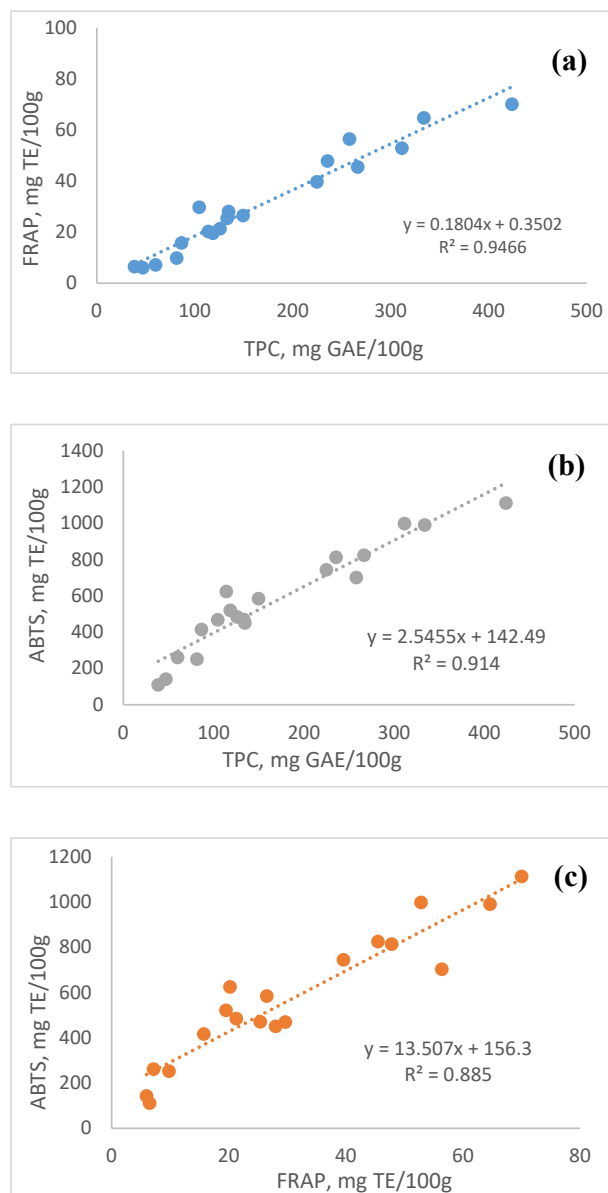
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**Table S1.** Worksheet with the independent variables set for ultrasound assisted extraction (UAE).

Sample #	Independent Variables			
	Solvent (water % in ethanol)	Solvent/solid ratio (mL/g)	Time (min)	Temperature (°C)
1	0	10	10	30
2	50	10	10	30
3	0	60	10	30
4	50	60	10	30
5	0	10	60	30
6	50	10	60	30
7	0	60	60	30
8	50	60	60	30
9	0	10	10	60
10	50	10	10	60
11	0	60	10	60
12	50	60	10	60
13	0	10	60	60
14	50	10	60	60
15	0	60	60	60
16	50	60	60	60
17	25	35	35	45
18	25	35	35	45
19	25	35	35	45



**Figure S1.** Correlation between **(a)** TPC and FRAP values, **(b)** TPC and ABTS values, **(c)** FRAP and ABTS values of the 19 extracts from *P. ostreatus*.

Table S2. GenBank sequences used for *Pleurotus ostratus* PeruMyc strains identification (accession no., sample no., and locality together with sequences length and identity percentage with *P. ostreatus* PeruMyc2412 strain were reported).

Species	Accession no.	Sample no.	Locality	% Identity	Sequence length blasted (bp)
<i>P. ostreatus</i>	MW846257	PeruMyc2412	Cima di Tuoro (PG, Italy)	100	646
<i>P. ostreatus</i>	MW846237	PeruMyc2475	Castel Porziano (RM, Italy)	99.53	646
<i>P. ostreatus</i>	KY9624412	P1	South Korea	100	665
<i>P. ostreatus</i>	MK542618	DMRP-30	India	100	653
<i>P. ostreatus</i>	KX449514	Champ-110	France	100	657
<i>P. ostreatus</i>	KR867641	MF11-13	Germany	99.84	648

**Table S3.** Correlation (measured as R<sup>2</sup> value) between the antimicrobial activity with the total phenol content (TPC) and antioxidant activity (DPPH, ABTS, FRAP).

Strains (ID)	Correlation coefficient (R <sup>2</sup> )			
	TPC	DPPH	ABTS	FRAP
<i>C. tropicalis</i> (DBVPG 6184)	0.5121	0.9367	0.7316	0.6507
<i>C. albicans</i> (DBVPG 6379)	0.5307	0.9275	0.739	0.6682
<i>C. parapsilopsis</i> (DBVPG 6551)	0.6065	0.9272	0.8589	0.7382
<i>C. albicans</i> (DBVPG 6183)	0.6065	0.9272	0.8589	0.7382
<i>E. coli</i> (ATCC 10536)	0.1919	0.9399	0.4652	0.3141
<i>E. coli</i> (PeruMycA 2)	0.0502	0.7426	0.2058	0.1262
<i>E. coli</i> (PeruMycA 3)	0.1028	0.8382	0.3087	0.2017
<i>P. aeruginosa</i> (PeruMycA 5)	0.1061	0.8714	0.3414	0.2073
<i>S. typhi</i> (PeruMycA 7)	0.1071	0.8818	0.3531	0.2089
<i>B. cereus</i> (PeruMycA 4)	0.0428	0.7959	0.2426	0.1172
<i>B. subtilis</i> (PeruMycA 6)	0.0151	0.7248	0.1744	0.0681
<i>S. aureus</i> (ATCC 6538)	0.0281	0.7225	0.1787	0.0914
<i>T. mentagrophytes</i> (CCF 4823)	0.1902	0.9492	0.4779	0.3123
<i>T. tonsurans</i> (CCF 4834)	0.8114	0.7687	0.9485	0.9059
<i>T. rubrum</i> (CCF 4879)	0.6589	0.8743	0.8226	0.7847
<i>T. rubrum</i> (CCF 4933)	0.5553	0.8761	0.7007	0.6876
<i>A. crocatum</i> (CCF 5300)	0.1683	0.7442	0.2889	0.2740
<i>A. quadrididum</i> (CCF 5792)	0.0610	0.6752	0.1751	0.1377
<i>T. erinacei</i> (CCF 5930)	0.1055	0.9009	0.4728	0.2019
<i>A. gypseum</i> (CCF 6261)	0.9722	0.4822	0.9036	0.9905
<i>A. currey</i> (CCF 5207)	0.0059	0.6008	0.0950	0.0443
<i>A. insingulare</i> (CCF 5417)	0.0626	0.6375	0.1579	0.1377