

Supplementary Material

Tab. S1 - Mass spectrometric characteristics of metabolites isolated from the culture liquid of *Armillaria* fungi.

Number	Trivial names of metabolite structures	Collision energy / molecular ion and characteristic peaks in MS / MS spectra (% of intensity) [M-H] ⁻
1	Melledonal C	24/479(98), 281(25), 215(100), 171(10)
2	Melleolide D	24/481(40), 281(20), 215(100), 171(12)
3	Melleolide C	23/447(70), 181(100), 137(8)
4	5'-O-Methylmelledonal	22/445(100), 281(40), 181(62), 137(6)
5	Melleolide B	23/431(99), 181(100), 137(5)
6	Melledonal B	26/465(32), 447(10), 419(20), 325(10), 281(15), 265(20), 215(100), 171(12)
7	Melledonal	25/431(100), 415(10), 183 (15), 165(100), 139(5)
8	Melledonol	26/433(100), 415(15), 183(5), 165(100)
9	Armillarinin	26/463(50), 419(12), 215(100)
10	Arnamiol	26/449(100), 215(95), 181(40)
11	Melleolide L	26/449(100), 438(40), 201(45), 181(55)
12	Melleolide M	24/451(100), 201(100), 183(20), 165(8)
13	6'-Chloro-10-hydroxy-5'-methoxyarmillan	22/483(100), 215(70), 171(5)
14	Melleolide H	22/429(100), 401(10), 181(75)
15	13-Hydroxy-5'-O-methylmelledonal	23/461(55), 415(10), 297(100), 279(95), 261(40), 181(55)

Tab. S2 - Effect of the melleolide mixture on the growth parameters of the *Populus balsamifera* callus culture.

Melleolide concentration (%)	Incubation (days)	<i>P</i> , g	Student's <i>t</i> -test	<i>P</i> , days ⁻¹	Student's <i>t</i> -test	μ , days ⁻¹	Student's <i>t</i> -test	<i>I</i>	Student's <i>t</i> -test
0.125	5	0.37 ± 0.069	↓ 2.5*	0.04 ± 0.010	↓ 2.8*	0.03 ± 0.009	↓ 3.2*	0.03 ± 0.006	↓ 9.0*
	9	0.33 ± 0.050	↓ 4.3*	0.03 ± 0.007	↓ 4.7*	0.02 ± 0.003	0.0	1.33 ± 0.090	0.1
0.250	5	0.36 ± 0.069	↓ 2.5*	0.03 ± 0.003	↓ 4.8*	0.02 ± 0.002	↓ 2.8*	1.36 ± 0.109	↓ 7.4*
	9	0.32 ± 0.043	↓ 4.8*	0.04 ± 0.010	↓ 5.95*	0.03 ± 0.009	0.0	1.32 ± 0.090	0.1
0.500	5	0.17 ± 0.033	↓ 3.1*	0.03 ± 0.007	↓ 3.2*	0.02 ± 0.003	↓ 3.6*	1.17 ± 0.033	↓ 10.4*
	9	0.17 ± 0.019	↓ 6.0*	0.03 ± 0.003	↓ 5.95*	0.02 ± 0.002	↓ 2.4*	1.17 ± 0.019	↓ 7.19*
0.000 (control)	5	0.39 ± 0.116	–	0.08 ± 0.023	–	0.04 ± 0.009	–	1.39 ± 0.116	–
	9	0.36 ± 0.055	–	0.07 ± 0.011	–	0.03 ± 0.005	–	1.36 ± 0.055	–

(*): bolded Student's *t*-test values are greater than the table values;

(↓): Investigated samplings' aggregate values are lower than the controls' aggregate values.

Tab. S3 - Effect of the melleolide mixture on *Pinus sylvestris* growth processes. (Ctrl): control; (Exp): experiment.

Days of experiment	Viability (%)		Foliage colour (points)		Foliage condition (points)		Aboveground length (mm)		Main root length (mm)	
	Ctrl	Exp	Ctrl	Exp	Ctrl	Exp	Ctrl	Exp	Ctrl	Exp
3	100 ± 7	93 ± 8.3	3 ± 0.3	3 ± 0.1	3 ± 0.2	3 ± 0.1	29 ± 2.3	37 ± 1.5	23 ± 0.5	26 ± 0.5
5	95 ± 2.9	50 ± 0.5	3 ± 0.2	3 ± 0.1	3 ± 0.1	2 ± 0	31 ± 3.1	38 ± 1.5	25 ± 1.5	26 ± 1.3
7	90 ± 0.9	23 ± 0.9	3 ± 0.3	2 ± 0.2	3 ± 0	1 ± 0	32 ± 2.9	38 ± 0.8	27 ± 2.7	26 ± 1.3
10	90 ± 4.5	18 ± 0.9	3 ± 0.2	1 ± 0	3 ± 0	1 ± 0.1	31 ± 1.2	22 ± 1.1	27 ± 1.2	16 ± 0.2
14	85 ± 8.5	3 ± 0.1	3 ± 0.1	1 ± 0	3 ± 0.1	0 ± 0	32 ± 0.3	15 ± 1.5	28 ± 0.5	10 ± 0.7

Tab. S4 - Effect of the melleolide mixture on *Larix sibirica* growth processes. (Ctrl): control; (Exp): experiment.

Days of experiment	Viability (%)		Foliage colour (points)		Foliage condition (points)		Aboveground length (mm)		Main root length (mm)	
	Ctrl	Exp	Ctrl	Exp	Ctrl	Exp	Ctrl	Exp	Ctrl	Exp
3	100 ± 1	100 ± 3	3 ± 0.3	3 ± 0.3	3 ± 0.2	2 ± 0.2	18 ± 1.1	17 ± 1.3	19 ± 1.9	18 ± 0.5
5	97 ± 9.7	100 ± 3	3 ± 0	3 ± 0.2	3 ± 0.2	2 ± 0	19 ± 1.9	18 ± 1.1	19 ± 0.9	18 ± 0.2
7	93 ± 0.9	94 ± 1.9	3 ± 0.1	2 ± 0.2	3 ± 0.2	2 ± 0.1	19 ± 0.6	18 ± 1.6	19 ± 1.1	18 ± 0.2
10	90 ± 0.9	71 ± 3.6	3 ± 0.2	2 ± 0.1	3 ± 0.1	2 ± 0.2	19 ± 1.5	18 ± 1.2	20 ± 0.8	19 ± 1.9
14	90 ± 8.1	58 ± 4.6	3 ± 0.2	2 ± 0.2	3 ± 0.1	2 ± 0.1	19 ± 0.9	14 ± 0.5	20 ± 1.1	19 ± 1.1
21	85 ± 0.9	47 ± 0.5	3 ± 0	2 ± 0	3 ± 0.1	2 ± 0.1	20 ± 0.2	15 ± 1.4	21 ± 0.7	18 ± 1.8

Fig. S1 - Dendrogram of the similarity of *Armillaria* strains in terms of biosynthesis of identified melleolides. Cluster analysis with the unweighted pair group method with arithmetic mean (UPGMA) was performed.

