

Table S1. Preparation of compound I (ergosterol) from *Basidiomycetes-X*.

Step	Volume (ml)	Concentration ^a (mg ml ⁻¹)	Amount (mg)	Yield (%)
2-propanol extract	4345	0.055	239	100
Condensed solution in CHCl ₃	52	4.25	221	92
Silica gel chromatography	86	1.22	105	44
Alumina chromatography	11	2.36	26	11
Normal phase HPLC (Silica gel)	1	4.92	4.9 ^b	2

Basidiomycetes-X powder (500 g) was used as the starting material and ergosterol was purified as described (section 2.2).

^a Ergosterol concentration was measured using an absorption coefficient of 0.97×10^4 l mol⁻¹ cm⁻¹ at 262 nm (Te Welscher et al. 2008).

^b The weight of the dry material was 4.5 mg when measured with an electronic balance.

Te Welscher YM, Ten Napel HH, Balagué MM, Souza CM, Riezman H, De Kruijff B, Breukink E, Natamycin blocks fungal growth by binding specifically to ergosterol without permeabilizing the membrane. J Biol Chem. 2008; 283:6393-6401. DOI: 10.1074/jbc.M707821200

Table S2. Preparation of compound II (CLA) from *Basidiomycetes-X*.

Step	Volume (ml)	Dry materials (mg)	Yield (%)
2-propanol extract	4405	2423	100
Condensed solution in CHCl ₃	78	1363	56
Silica gel chromatography	53	977	40
Alumina chromatography	36	225	9
2nd silica gel chromatography	2	151	6
Reverse phase HPLC	1	29	1
2nd reverse phase HPLC	1	11.4	0.5

Basidiomycetes-X powder (500 g) was used as the starting material and compound II was purified as described (section 2.4).

Table S3. Preparation of compound IV (uridine) from *Basidiomycetes-X*.

Step	Volume	Concentration ^a	Uridine	Yield
	(ml)	(mg ml ⁻¹)	(mg)	(%)
Water extract	2010	0.91	1829	100
Methanol soluble	100	10.3	1030	56
Methanol soluble at low temperature	50	8.7	435	24
2nd HPLC (16.5-19.5 min)	-	-	10.6 ^b	0.6

-, not recorded

Basidiomycetes-X powder (100 g) was used as the starting material and uridine was purified as described (section 2.10).

^a It was calculated using the molar extinction coefficient of uridine in water (10,100 l mol⁻¹ cm⁻¹ at 262 nm).

^b The weight of the dry material was measured with an electronic balance.

Table S4. Preparation of compound V (adenosine) from *Basidiomycetes-X*.

Step	Volume (ml)	Concentration ^a (mg ml ⁻¹)	Adenosine (mg)	Yield (%)
Water extract	2010	0.68	1367	100
Methanol soluble	100	7.65	765	56
Methanol soluble at low temperature	50	6.5	325	24
HPLC (22.6-25.9 min)	-	-	14.0 ^b	1.0

-, not recorded

Basidiomycetes-X powder (100 g) was used as the starting material and adenosine was purified as described (section 2.10).

^a It was calculated using the molar extinction coefficient of adenosine in water (14,900 l mol⁻¹ cm⁻¹ at 260 nm).

^b The weight of the dry material was measured with an electronic balance.

Table S5. Summary of the NMR analysis of compound I (ergosterol) from *Basidiomycetes-X*.

Position	<i>Basidiomycetes-X</i> ergosterol ^a		Standard ^b	
	¹³ C (ppm)	¹ H (ppm)	¹³ C (ppm)	¹ H (ppm)
1	38.45		38.45	
2	32.08		32.08	
3	70.55	3.64 (m, 1H)	70.55	3.63 (m, 1H)
4	40.88		40.88	
5	139.86		139.87	
6	119.67	5.58 (dd, 1H)	119.66	5.55 (dd, 1H)
7	116.36	5.39 (m, 1H)	116.36	5.37 (m, 1H)
8	141.47		141.47	
9	46.32		46.31	
10	37.10		37.10	
11	21.19		21.19	
12	39.16		39.15	
13	42.90		42.90	
14	54.63		54.63	
15	23.08		23.08	
16	28.39		28.39	
17	55.80		55.79	
18	12.13	0.63 (s, 3H)	12.13	0.62 (s, 3H)
19	17.70	0.95 (s, 3H)	17.70	0.93 (s, 3H)
20	40.52		40.52	
21	21.19	0.84 (d, 6.41 Hz, 3H)	21.19	0.82 (d, 6.41 Hz, 3H)
22	135.65	5.17 (m, 1H)	135.65	5.14 (m, 1H)
23	132.05	5.23 (m, 1H)	132.05	5.22 (m, 1H)
24	42.90		42.90	
25	33.17		33.17	
26	19.74	0.92 (d, 6.87 Hz, 3H)	19.74	0.90 (d, 6.87 Hz, 3H)
27	20.04	0.82 (d, 6.87 Hz, 3H)	20.04	0.81 (d, 6.41 Hz, 3H)
28	16.36	1.04 (d, 6.41 Hz, 3H)	16.36	1.02 (d, 6.41 Hz, 3H)

NMR spectra were recorded in CDCl₃ as the solvent using TMS as an NMR internal standard. The NMR spectroscopic data are essentially identical to that reported by Li et al. (2015).

^a Compound I was purified from *Basidiomycetes-X* powder as described (section 2.2).

^b The standard was purchased from Tokyo Chemical Industry Co., Ltd.

Li X, Wu Q, Xie Y, Ding Y, Du WW, Sdiri M, Yang BB, Ergosterol purified from medicinal mushroom *Amauroderma rude* inhibits cancer growth *in vitro* and *in vivo* by up-regulating multiple tumor suppressors. *Oncotarget*. 2015; 6:17832–17846.

DOI: 10.18632/oncotarget.4026

Table S6. Summary of the NMR analysis of compound II (CLA) from *Basidiomycetes-X*.

Position	Compound II ^a			(10E, 12Z)-CLA ^b	
	¹³ C (ppm)	¹ H (ppm)	HMBC (H to C)	¹³ C (ppm)	¹ H (ppm)
1	179.67	-		179.26	
2	34.12	2.34 (t, 7.5 Hz, 2H)	C3, C4	33.91	2.35 (t, 7.6 Hz, 2H)
3	24.72	1.63 (quint., 7.5 Hz, 2H)	C2, C4	24.68	1.63 (quint., 7.3 Hz, 2H)
4	29.07 *	1.29-1.34 (m, 2H)	C5 **	29.04	1.29-1.34 (m, 2H)
5	29.17 *	1.29-1.34 (m, 2H)	C6 **	29.15 ***	1.29-1.34 (m, 2H)
6	29.19 *	1.29-1.34 (m, 2H)	C7 **	29.18 ***	1.29-1.34 (m, 2H)
7	29.29 *	1.29-1.34 (m, 2H)	C8 **	29.28 ***	1.29-1.34 (m, 2H)
8	29.39 *	1.38 (quint., 7.2 Hz, 2H)	C7, C10	29.38 ***	1.38 (quint., 7.1 Hz, 2H)
9	32.86	2.09 (dt, 6.6, 7.2 Hz, 2H)	C8, C10, C11	32.86	2.09 (dt, 6.8, 7.6 Hz, 2H)
10	134.58	5.65 (dt, 15.0, 7.2 Hz, 1H)	C8, C9, C13	134.59	5.65 (dt, 14.4, 7.6 Hz, 1H)
11	125.67	6.29 (dddt, 11.4, 15.0, 1.8, 1.2 Hz, 1H)	C9, C12	125.66	6.29 (dddt, 10.8, 15.2, 1.6, 1.2 Hz, 1H)
12	128.58	5.94 (ddt, 10.8, 11.4, 1.2 Hz, 1H)	C10, C11, C14	128.57	5.94 (ddt, 10.8, 10.8, 1.2 Hz, 1H)
13	130.16	5.30 (dt, 10.8, 7.8 Hz, 1.8 Hz, 1H)	C10, C11, C14	130.17	5.30 (dt, 10.8, 7.6 Hz, 1.6 Hz 1H)
14	27.67	2.15 (ddt, 7.8, 1.2, 7.2 Hz, 2H)	C12, C13, C15, C16	27.67	2.15 (ddt, 7.6, 1.2, 7.1 Hz, 2H)
15	29.43 *	1.38 (quint., 7.2 Hz, 2H)	C13, C16, C17	29.43 ***	1.38 (quint., 7.1 Hz, 2H)
16	31.49	1.29-1.34 (m, 2H)	C17, C15 **	31.50	1.29-1.34 (m, 2H)
17	22.57	1.29-1.34 (m, 2H)	C16 **	22.57	1.29-1.34 (m, 2H)
18	14.07	0.89 (t, 6.9 Hz, 3H)	C16, C17	14.06	0.89 (t, 7.0 Hz, 3H)
CO ₂ H	-	6.83 (brs, 1H)		179.26	

NMR spectra were recorded in CDCl₃ as the solvent using TMS as an NMR internal standard.

^a Compound II was purified from *Basidiomycetes-X* powder as described (section 2.4).

^b (10E, 12Z)-CLA was purchased from Cayman chemical Co.

* peaks exchangeable, ** expected correlations because of the overlapping signals, *** peaks exchangeable

Table S7. Summary of the NMR analysis of compound III (DDMP) from *Basidiomycetes-X*.

Position	¹³ C [ppm]	¹ H [ppm] (<i>J</i> in Hz)	HMBC (H to C)
1	72.7	4.09, dd (10.4, 9.6)	2, 3, 5
		4.34, dd (11.2, 4.8)	2, 3, 5
2	69.1	4.19, dd (9.6, 4.8)	1, 3
3	189.3		
4	132.8		
5	161.1		
6	15.5	2.05, s	4, 5

NMR spectra were recorded in methanol-d₄ as the solvent using TMS as an NMR internal standard. The NMR spectroscopic data are identical to that reported by Chen et al. (2021).

The structure of DDMP is shown in Fig. 5.

Chen Z, Xi G, Fu Y, Wang Q, Cai L, Zhao Z, Liu Q, Bai B, Ma Y, Synthesis of 2,3-dihydro-3,5-dihydroxy-6-methyl-4*H*-pyran-4-one from maltol and its taste identification. Food Chemistry. 2021; 361:30052.

DOI: 10.1016/j.foodchem.2021.130052

Table S8. Summary of the NMR analysis of compound IV (uridine) from *Basidiomycetes-X*.

Position	Compound IV ^a		Uridine ^b	
	¹³ C [ppm]	¹ H [ppm] (<i>J</i> in Hz)	¹³ C [ppm]	¹ H [ppm] (<i>J</i> in Hz)
1	166.277		169.07	
2	151.732		154.47	
3	141.899	5.796 (d, 7.8 Hz, 1H)	144.56	5.900 (d, 10 Hz, 1H)
4	102.336	7.771 (d, 7.8 Hz, 1H)	104.99	7.892 (d, 10 Hz, 1H)
5	89.439	5.811 (d, 4.8 Hz, 1H)	92.05	5.915 (d, 5 Hz, 1H)
6	84.259	4.031 (dd, 1H)	86.92	4.143 (dd, 1H)
7	73.698	4.252 (m, 1H)	76.41	4.356 (m, 1H)
8	69.476	4.125 (m, 1H)	72.10	4.241 (m, 1H)
9	60.801	3.811 (dd, 1H)	63.45	3.925 (dd, 1H)
9		3.704 (dd, 1H)		3.824 (dd, 1H)

NMR spectra were recorded in D₂O as the solvent using TMS as an NMR internal standard.

^a Compound IV was purified from *Basidiomycetes-X* powder as described (section 2.10).

^b Madison Metabolomics Consortium - Francisca Jofre, Mark E. Anderson, John L. Markley DOI: <https://doi.org/10.13018/BMSE000158>

Table S9. Summary of the NMR analysis of compound V (adenosine) from *Basidiomycetes-X*.

Position	Compound V ^a		Adenosine ^b	
	¹³ C [ppm]	¹ H [ppm] (<i>J</i> in Hz)	¹³ C [ppm]	¹ H [ppm] (<i>J</i> in Hz)
1	158.379		158.43	
2	155.195	8.194(1H, s)	155.30	8.19(1H, s)
3	151.343		151.20	
4	143.591	8.314(1H, s)	143.36	8.31(1H, s)
5	122.033		121.90	
6	91.275	6.051(d,6 Hz,1H)	91.07	6.05(d,5 Hz,1H)
7	88.767	4.297(dd,1H)	88.63	4.29(dd,1H)
8	76.620	4.784(m,1H)	76.43	4.79(m,1H)
9	73.569	4.30(dd,1H)	73.42	4.42(dd,1H)
10	64.425	3.882(m,2H)	64.27	3.817(m,2H)

NMR spectra were recorded in D₂O as the solvent using TMS as an NMR internal standard.

^a Compound V was purified from *Basidiomycetes-X* powder as described (section 2.10).

^b Madison Metabolomics Consortium - Francisca Jofre, Mark E. Anderson, John L. Markley, Melanie E. Ulrich. DOI: <https://doi.org/10.13018/BMSE000061>