Isolation and Identification of Aryl Hydrocarbon Receptor Modulators in White Button Mushrooms (*Agaricus bisporus*)

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Table S1. mRNA gene-targeted primers used in this study

Gene	Abbreviation	Sequence (5'-3')
Ribosomal protein L13	*Rpl13*	TAC CAG AAA GTT TGC TTA CCT GGG TGC CTG TTT CCG TAA CCT CAA G
Glyceraldehyde-3-phosphate dehydrogenase	*Gapdh*	CCT CGT CCC GTA GAC AAA ATG TGA AGG GGT CGT TGA TGG C
Cytochrome P450, family 1, member A1	*CYP1A1*	CTC TTC CCT GGA TGC CTT GAA GGA TGT GGC CCT TCT CAA ATG
Cytochrome P450, family 1, member A2	*CYP1A2*	GCC CCT GCC CTT CAG TGG TAC AG AGG AGT GGA GCC GAT GCG GA
Aryl-hydrocarbon receptor repressor	*AHRR*	GTG CGA ATC GGA ACT GCA TGG AAA TCA GTC TGT TCC CTG AGC ACC AAA

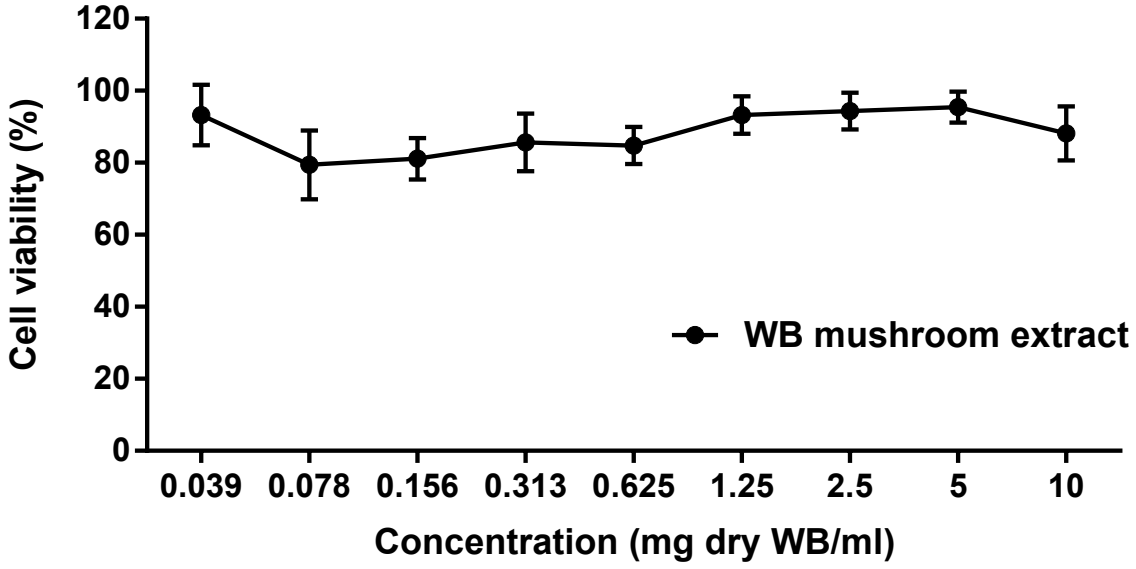

Figure S1. Percent viability of HepG2 40/6 cells measured by MTT assay after exposure for 5 hours to various dilutions of WB mushroom extract. Values are the mean ± S.D. of n = 3 per group.

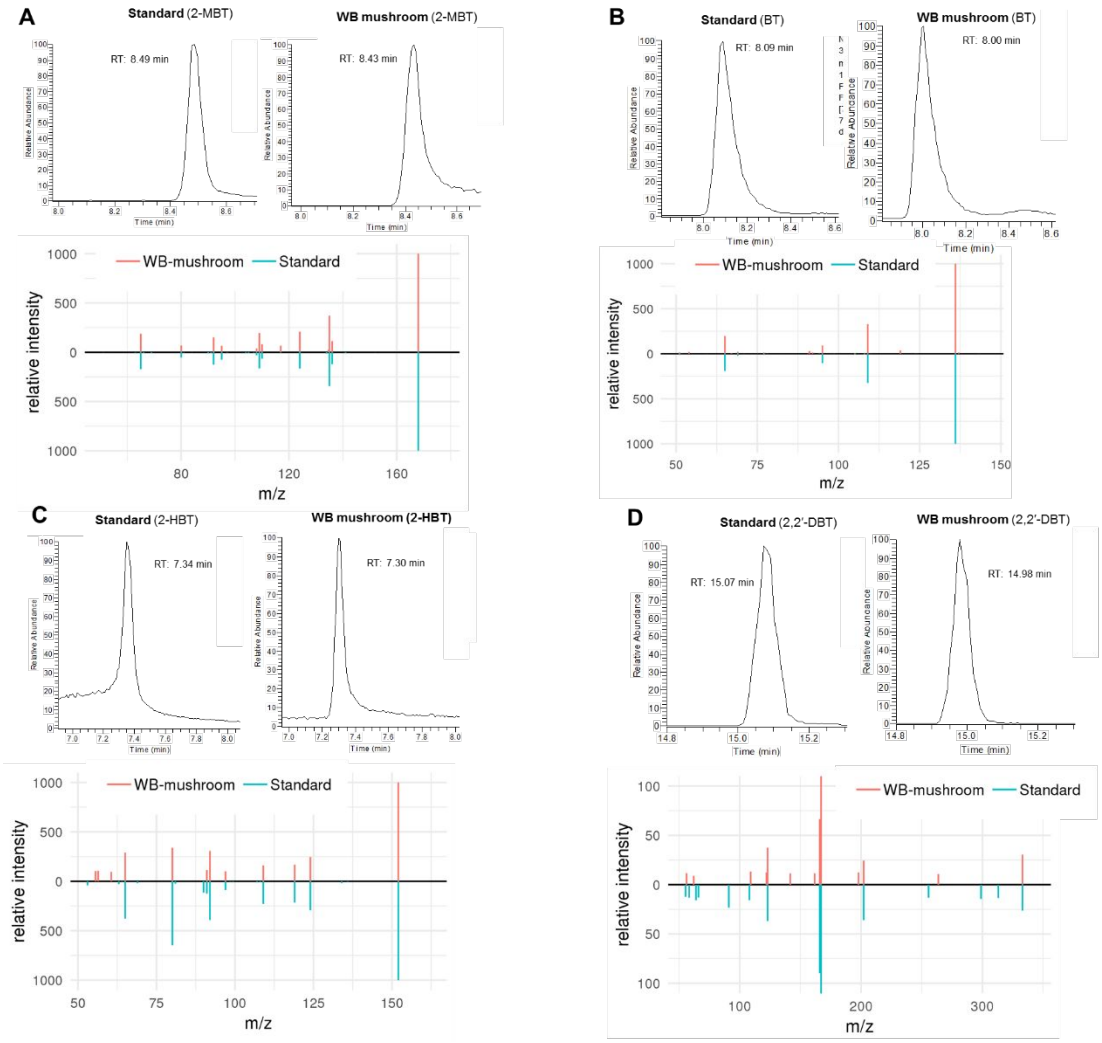

Figure S2. UHPLC/MS-MS chromatograms of standard (A) 2-mercaptobenzothiazole (2-MBT), (B) benzothiazole (BT), (C) 2-hydrobenzothiazole (2-HBT), and (D) 2,2'-Dithiobis(Benzothiazole) (2,2'-DBT) and from WB mushroom extract.

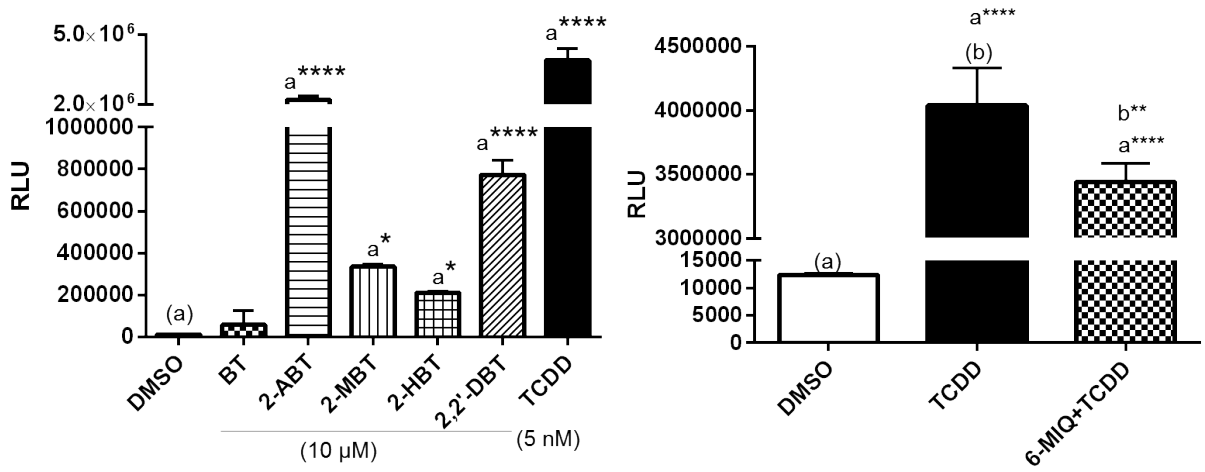

Figure S3. AHR modulator activity of 10 µM identified compounds. Hepa 1.1 reporter cells were treated with compounds alone or with 5 nM TCDD for 5 h. Values are the mean ± S.D. of n = 3 per group. *p < 0.05, **p < 0.01, ****p < 0.0001

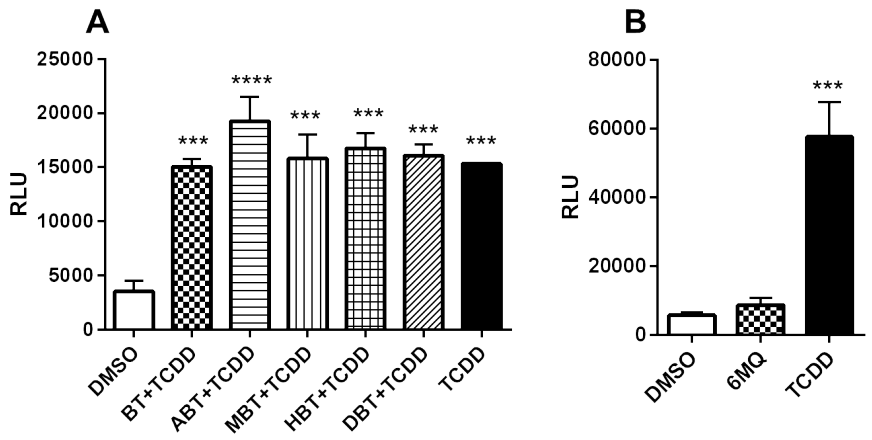

Figure S4. (A) AHR antagonistic activities of BT derivatives. HepG2 40/6 reporter cells were treated with 5 nM TCDD and 10 μM of BT derivatives for 5 h. (B) AHR agonistic activity of 6-MIQ. HepG2 40/6 reporter cells were treated with 6-MIQ alone or 5 nM TCDD for 5 h. Values are the mean ± S.D. of n = 3 per group. ***$p < 0.001$, ****$p < 0.0001$

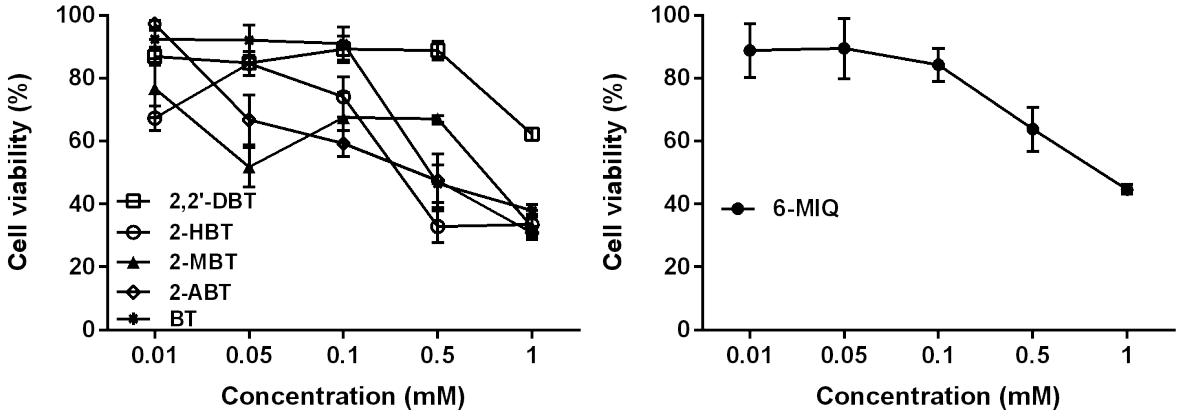

Figure S5. Percent viability of HepG2 40/6 cells measured by MTT assay after exposure for 5 hours to various concentrations of AHR modulators. Values are the mean ± S.D. of n = 3 per group.