

Figure 1

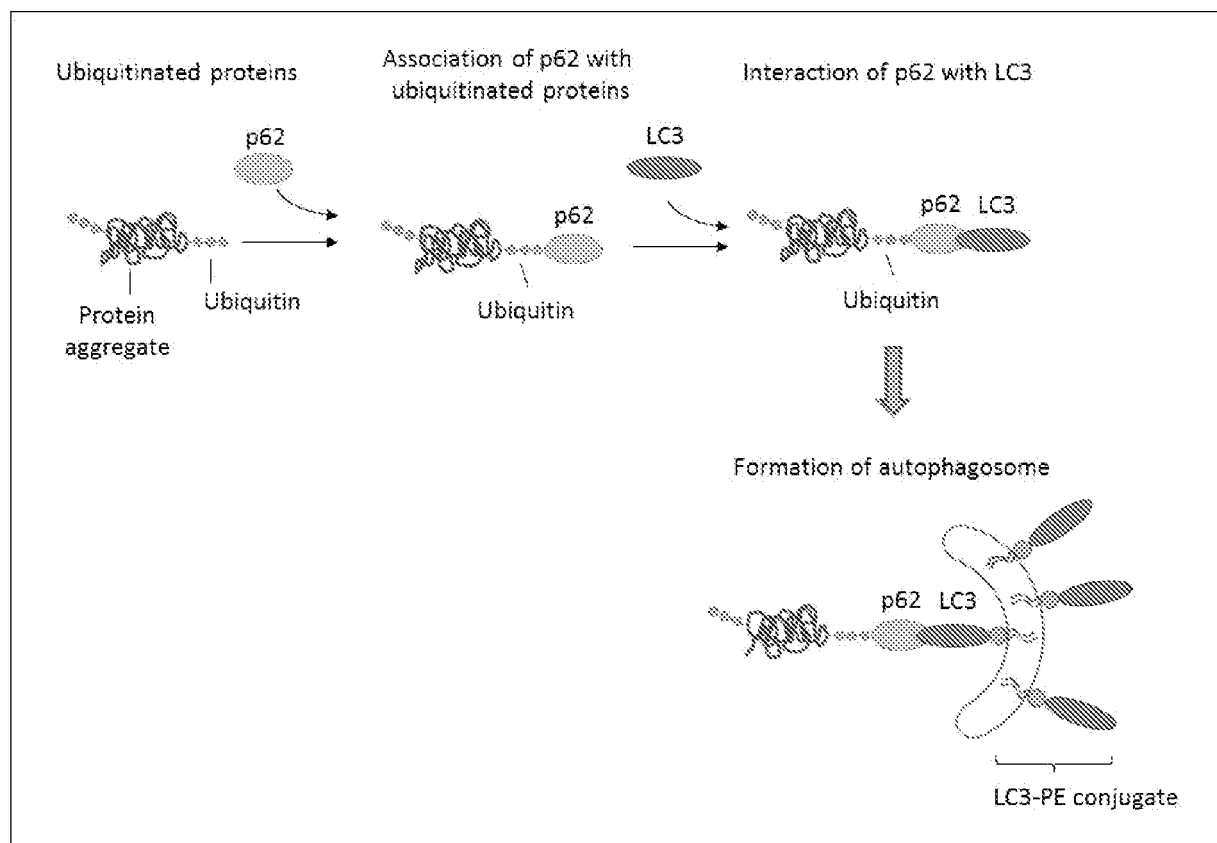
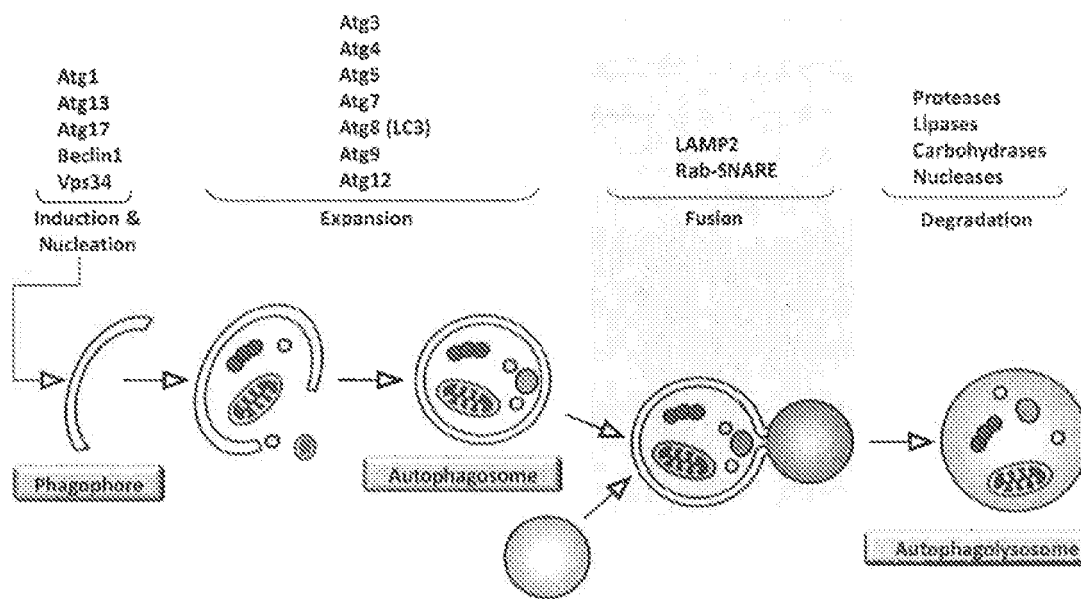
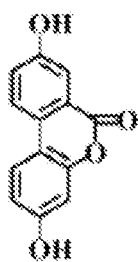
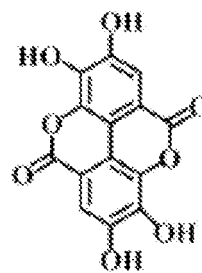
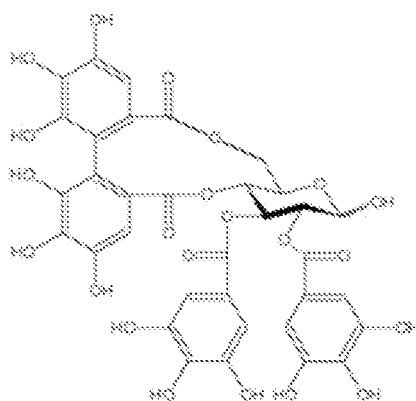


Figure 2

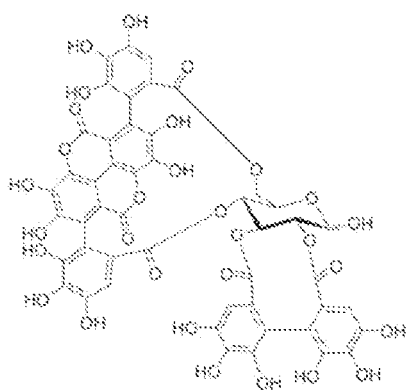
Urolithin A (UA)



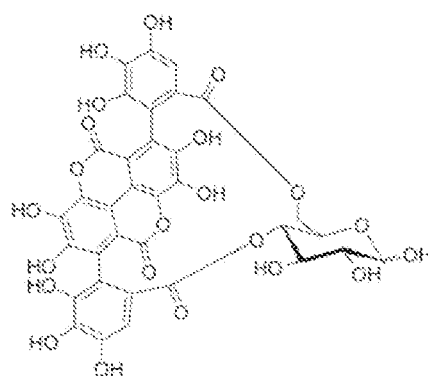
Ellagic Acid (EA)



Tellimagrandin (TL)



Punicalagin (PA)



Punicalin (PB)

Figure 3

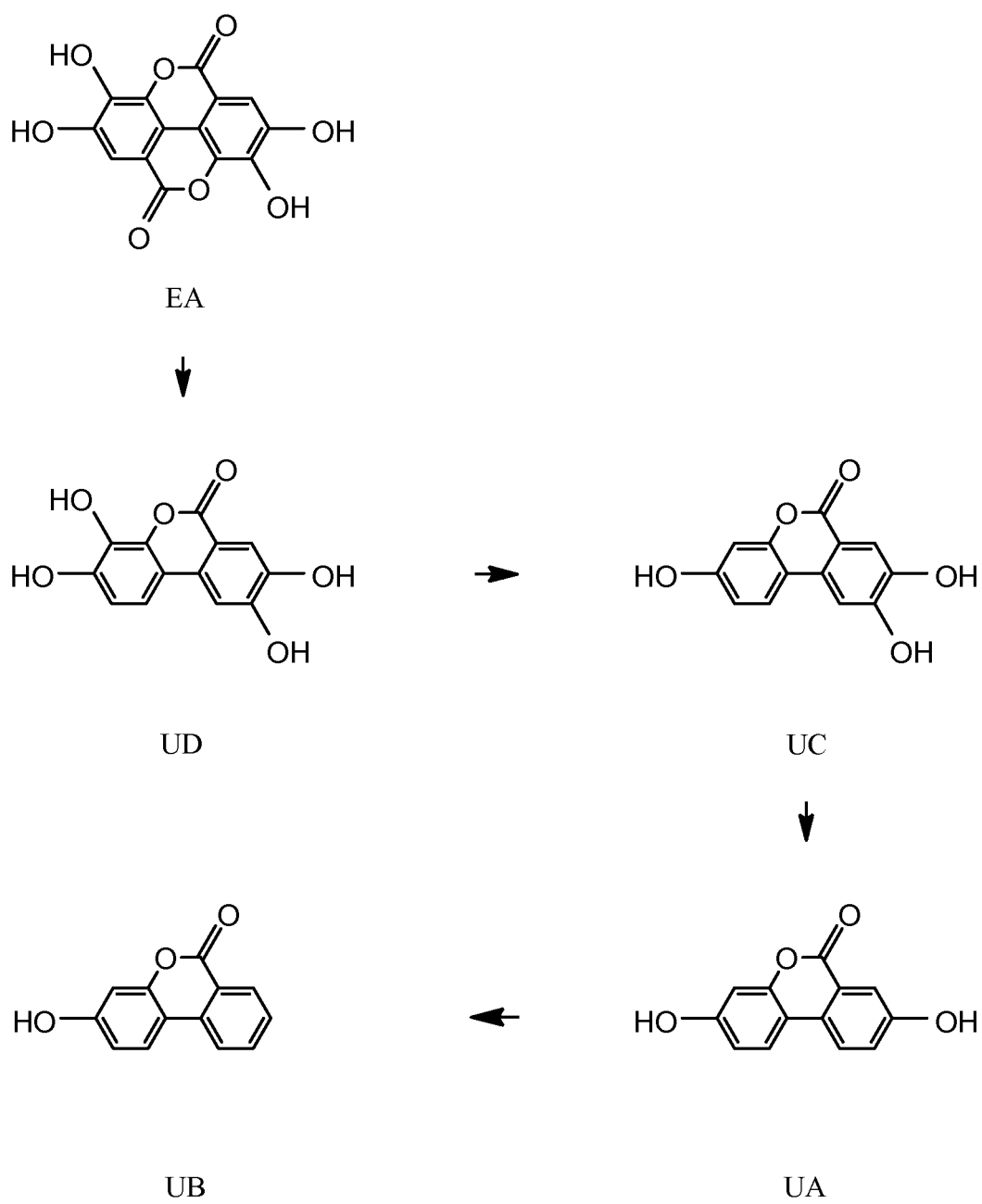


Figure 4

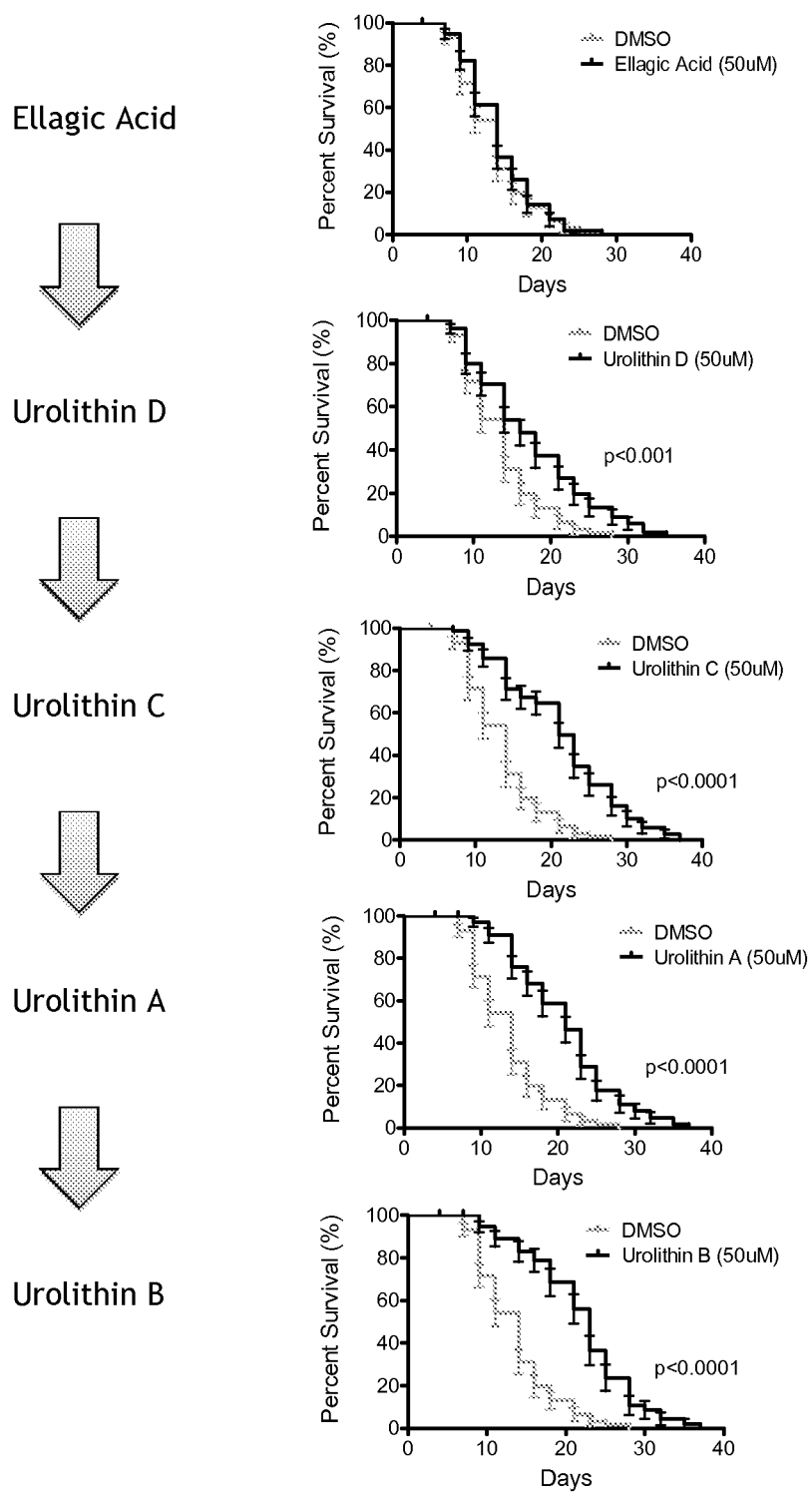


Figure 5

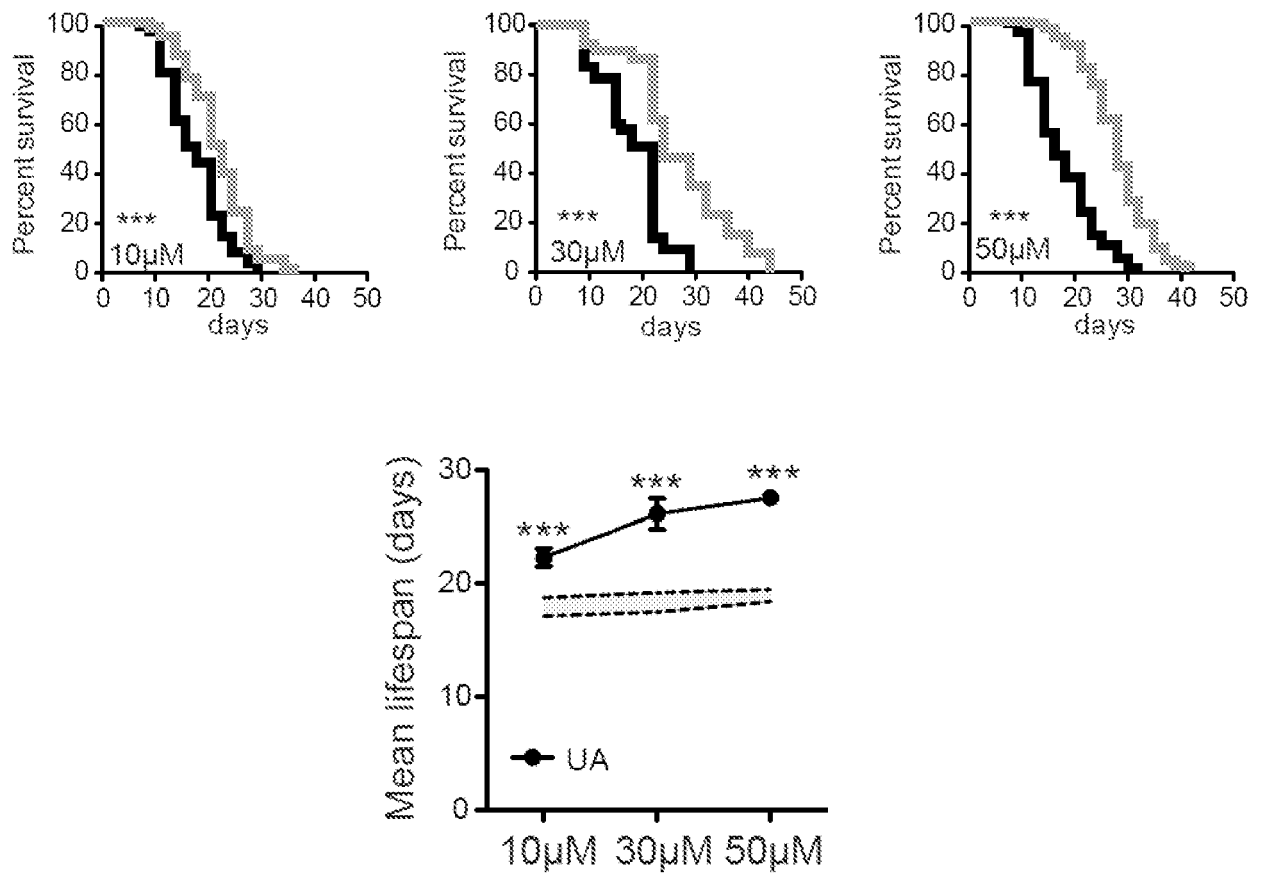


Figure 6

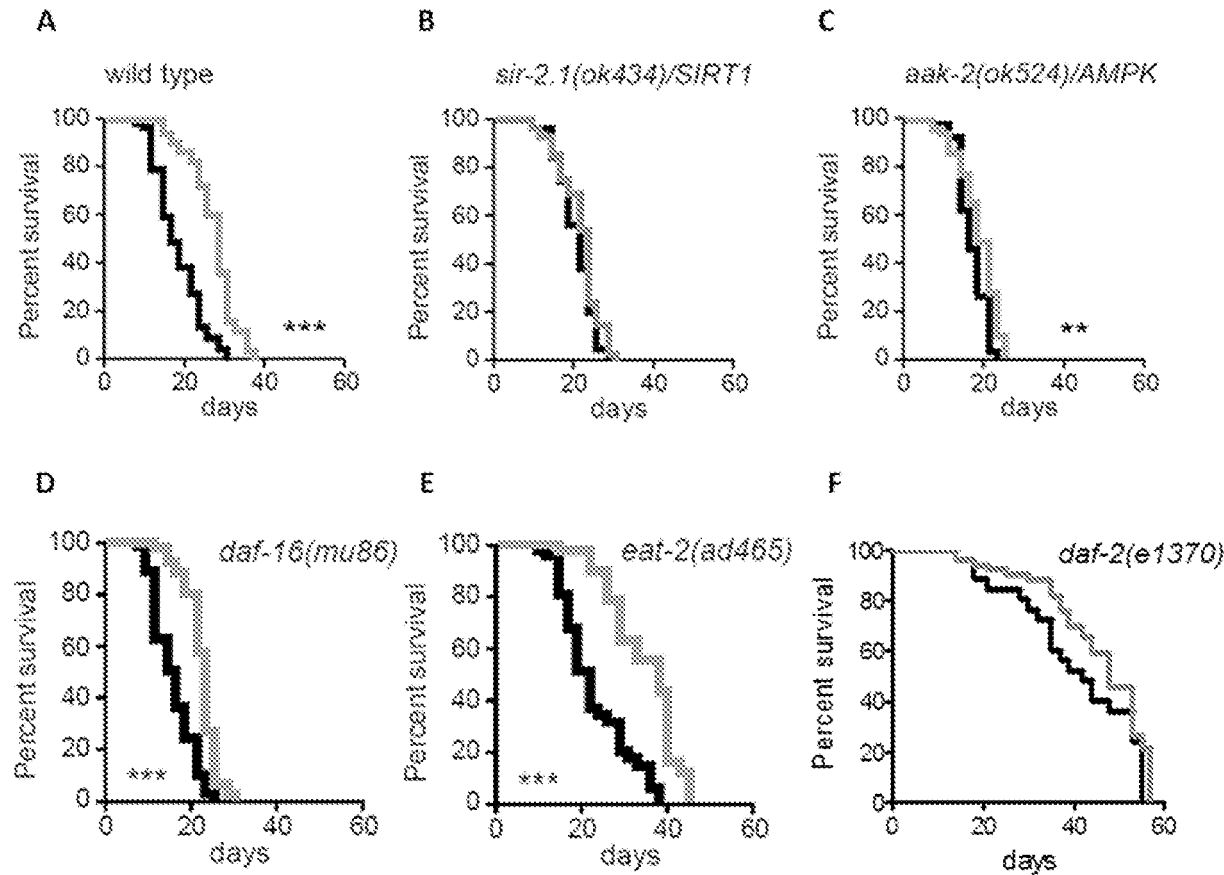


Figure 7

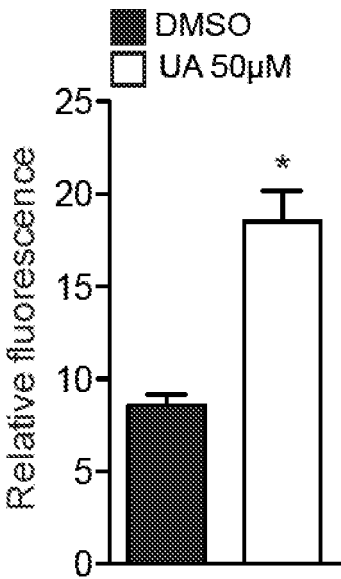
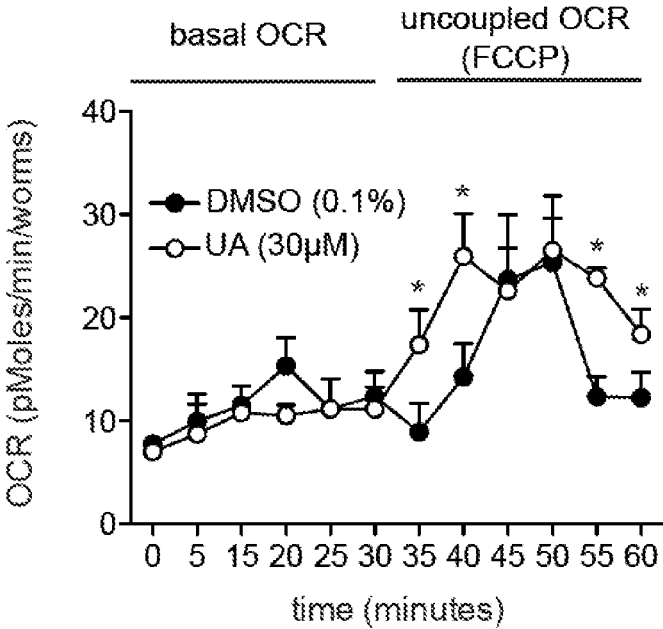
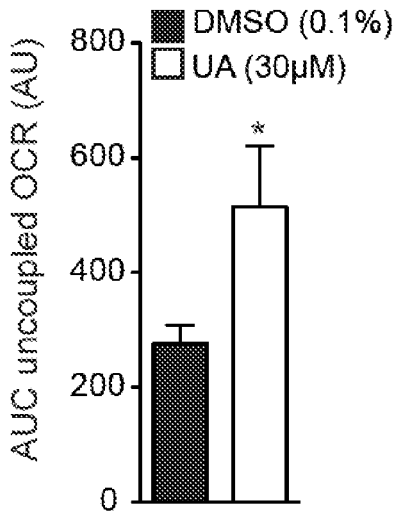


Figure 8

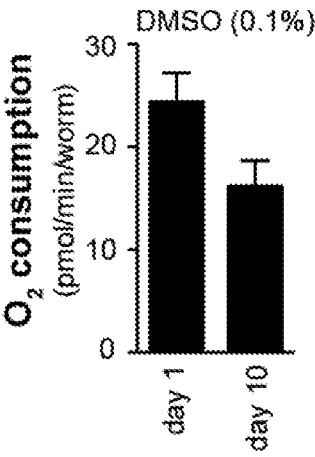
A



B



C



D

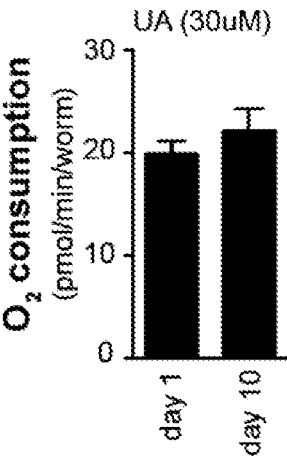


Figure 9

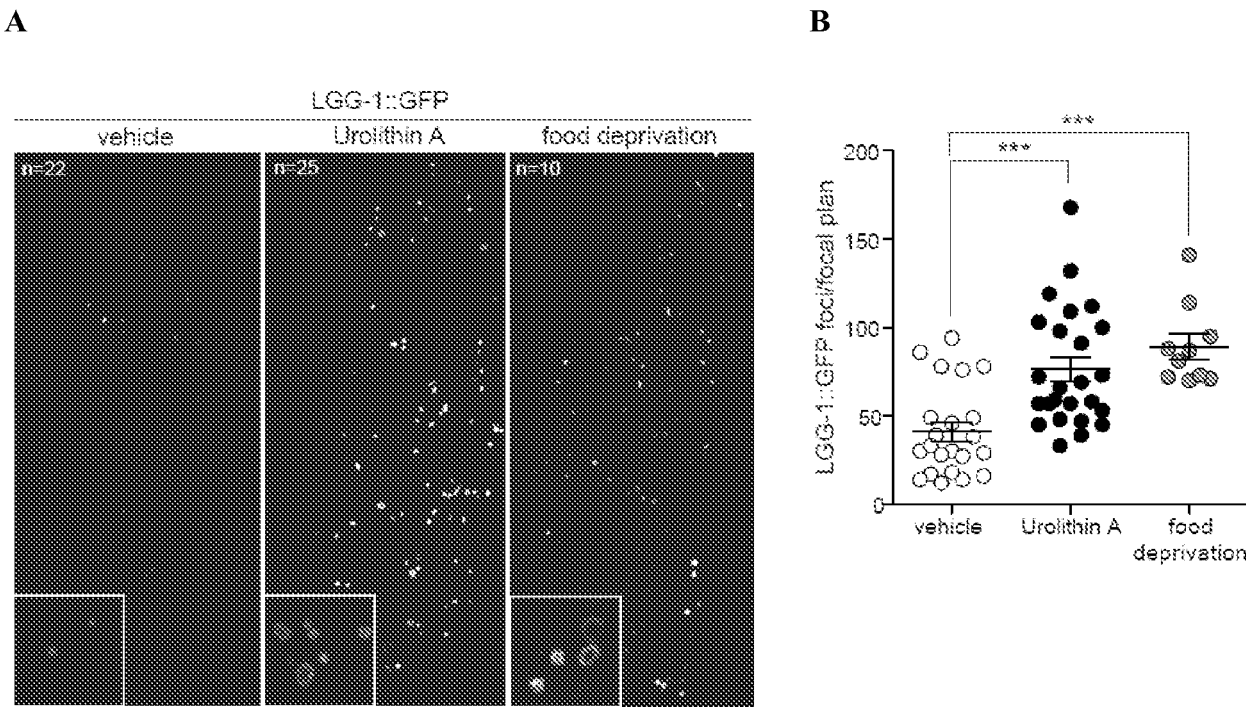


Figure 10

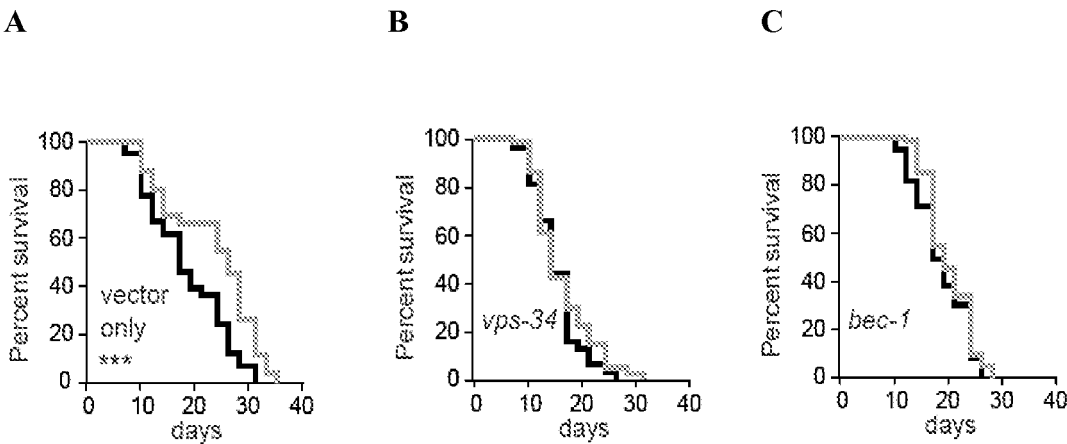
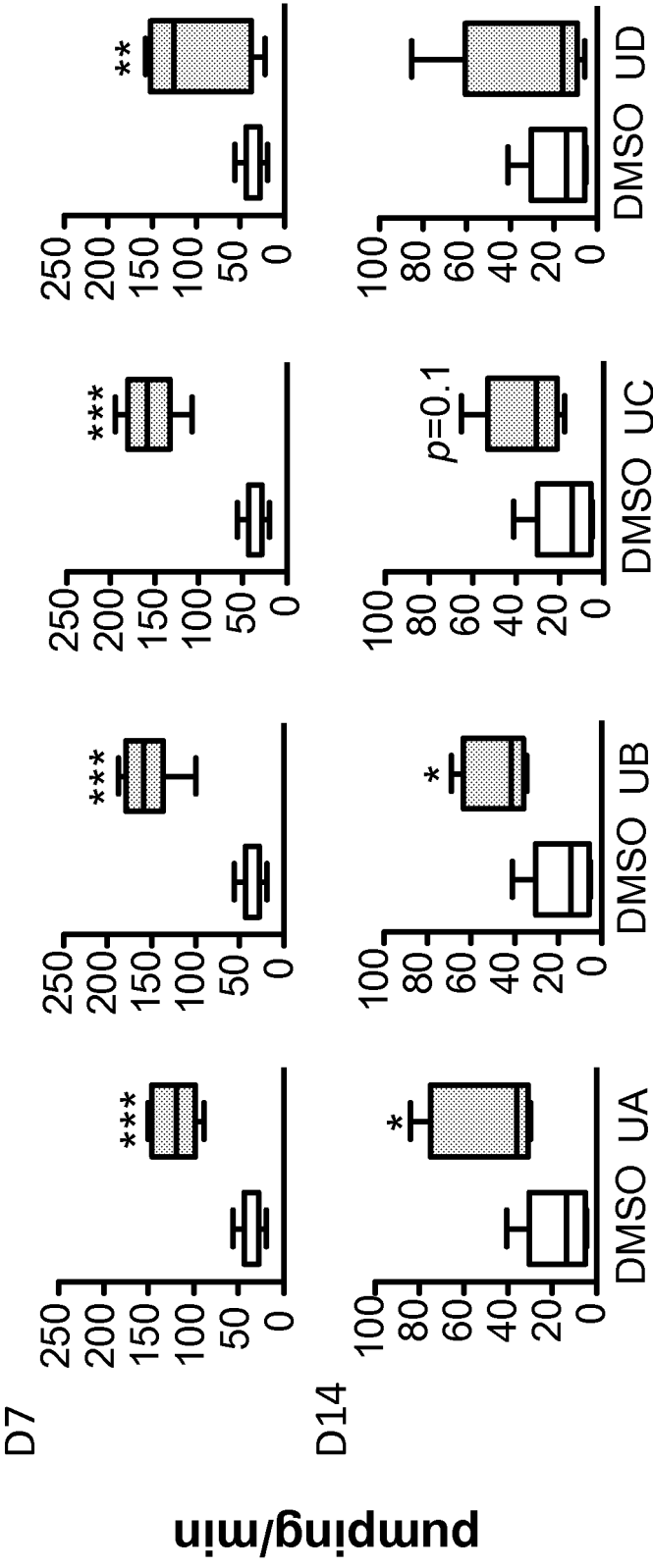


Figure 11



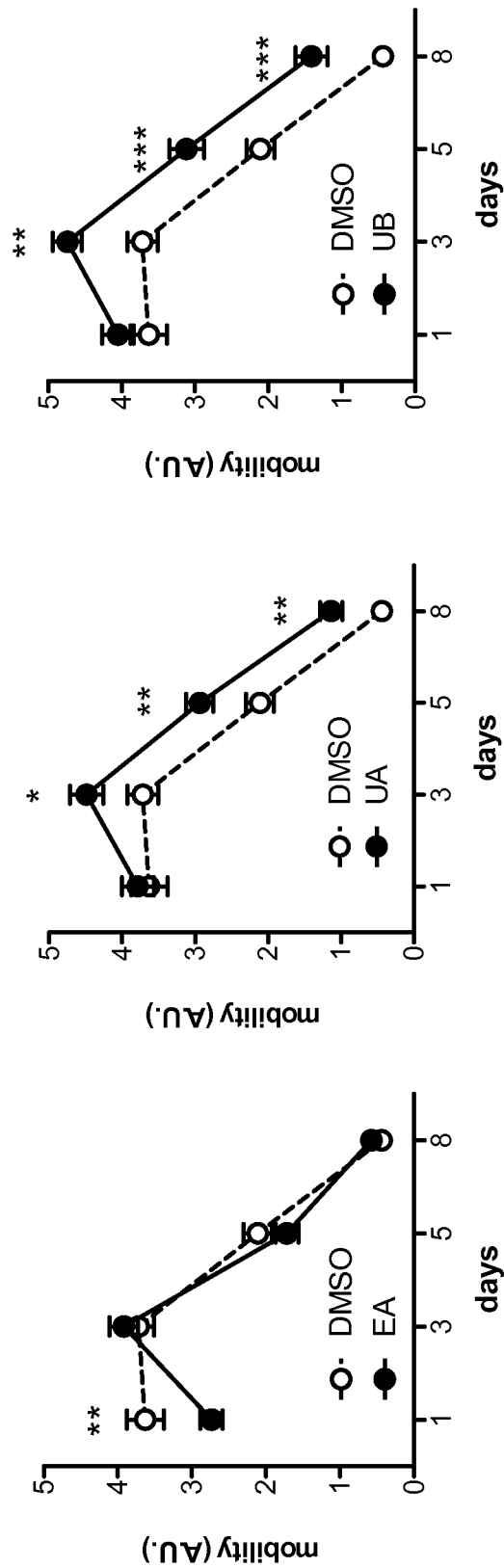


Figure 12

Figure 13

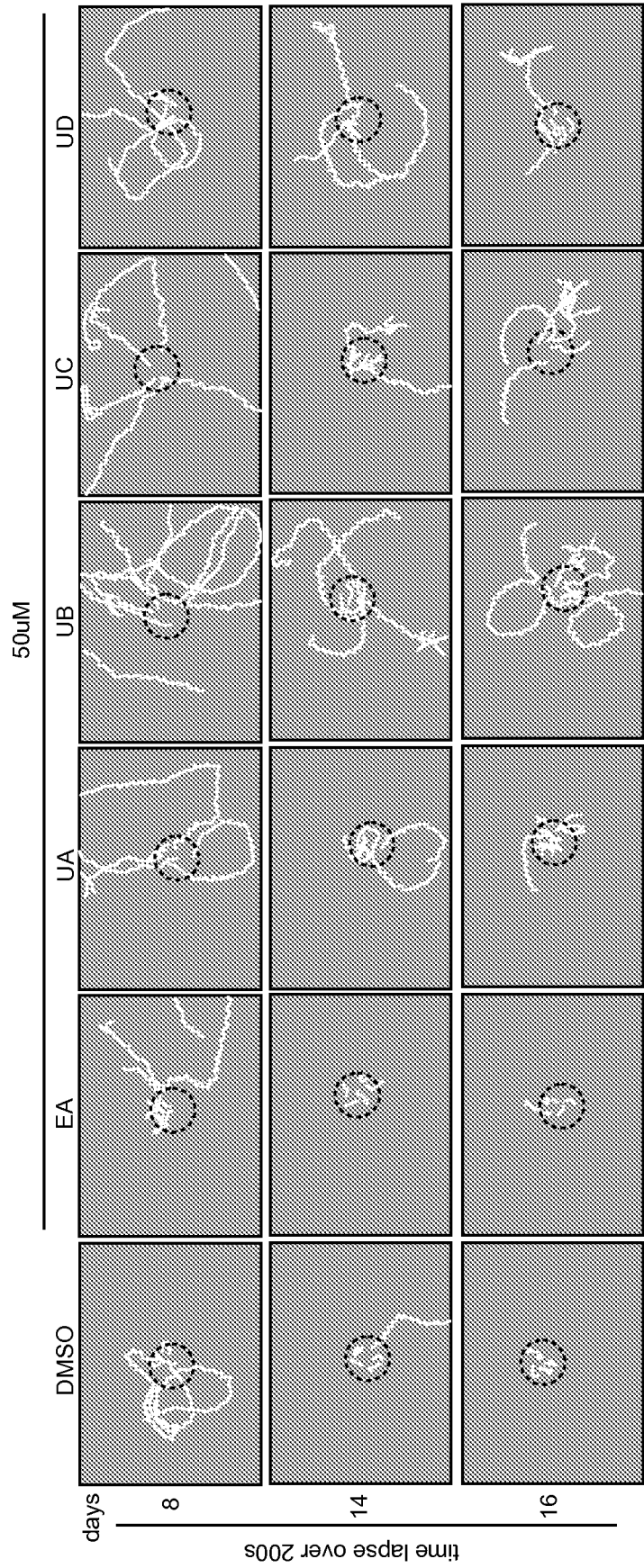


Figure 14

Mode K Cells

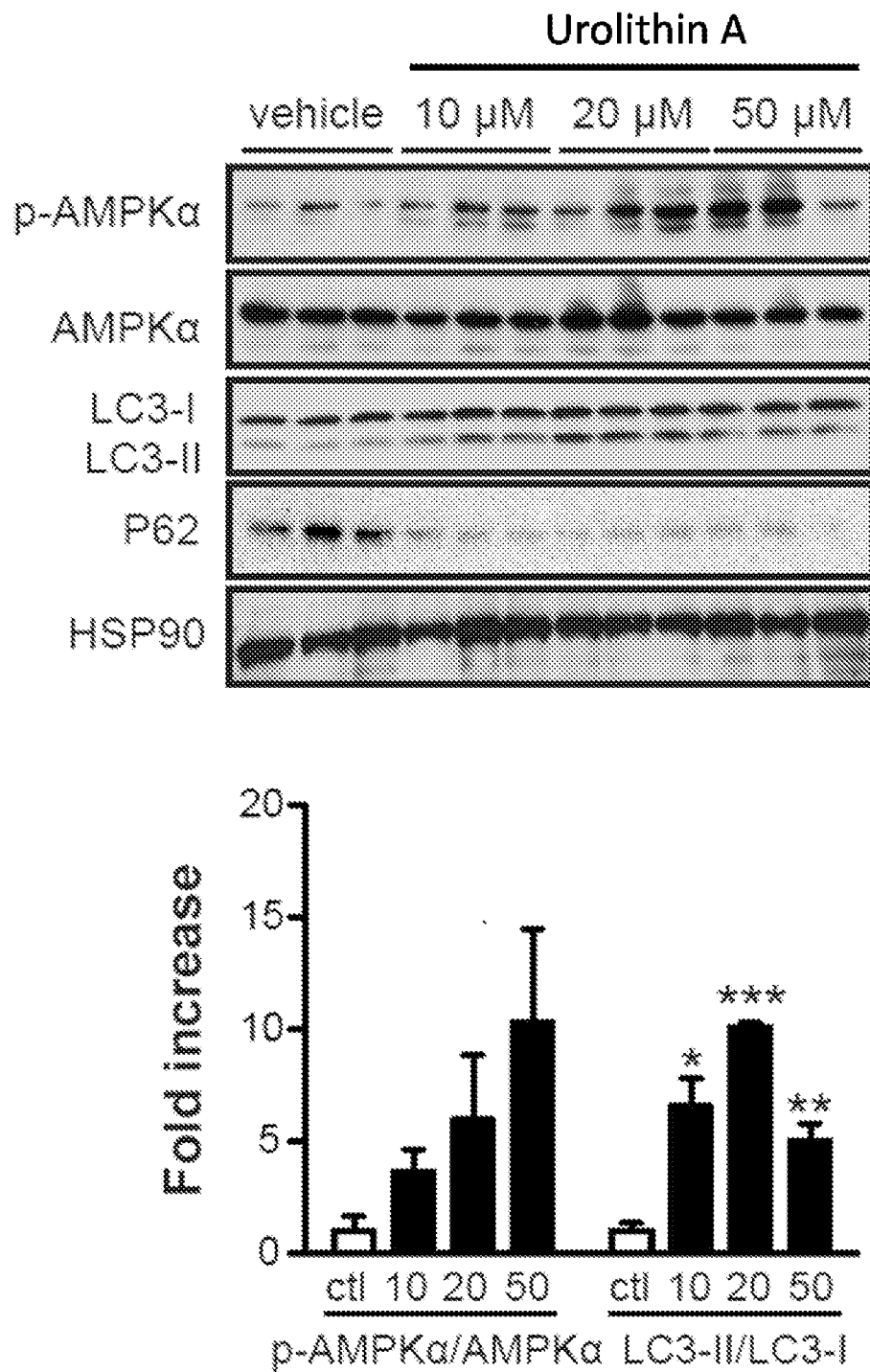


Figure 15

Primary Hepatocytes

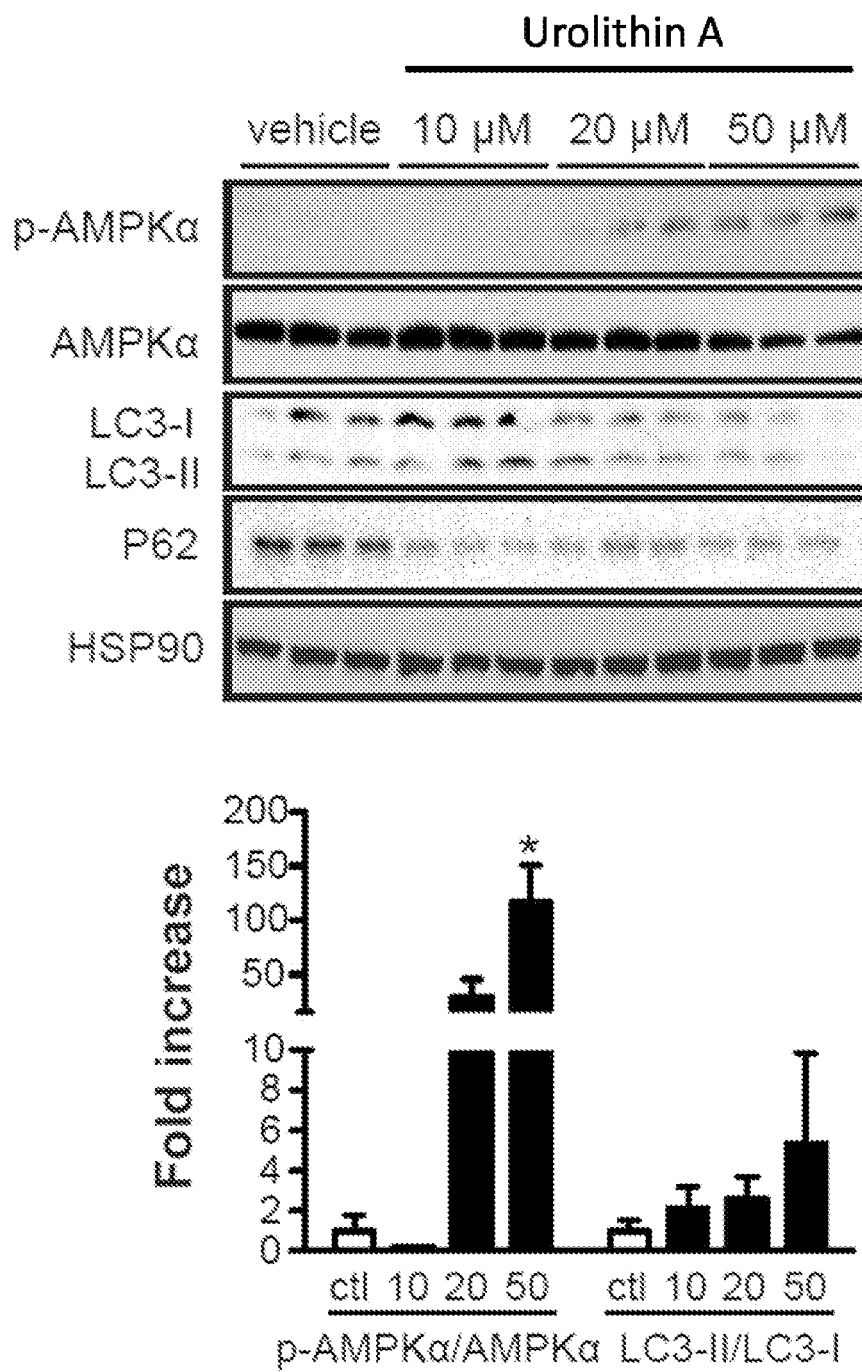


Figure 16

C2C12 Mouse Myoblasts

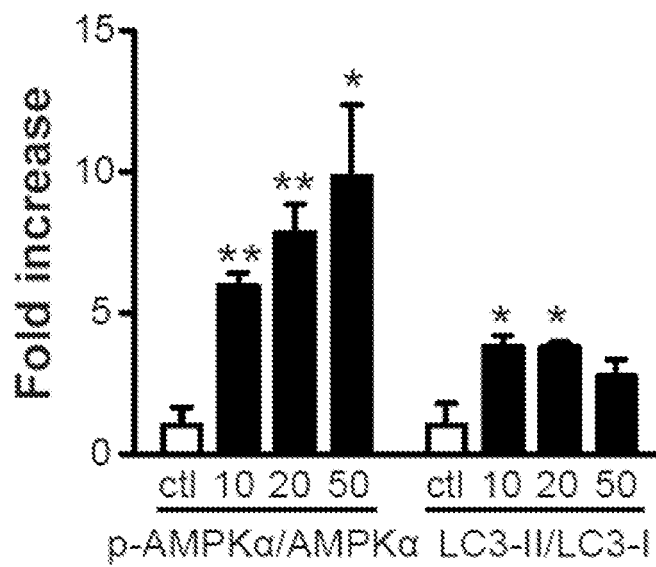
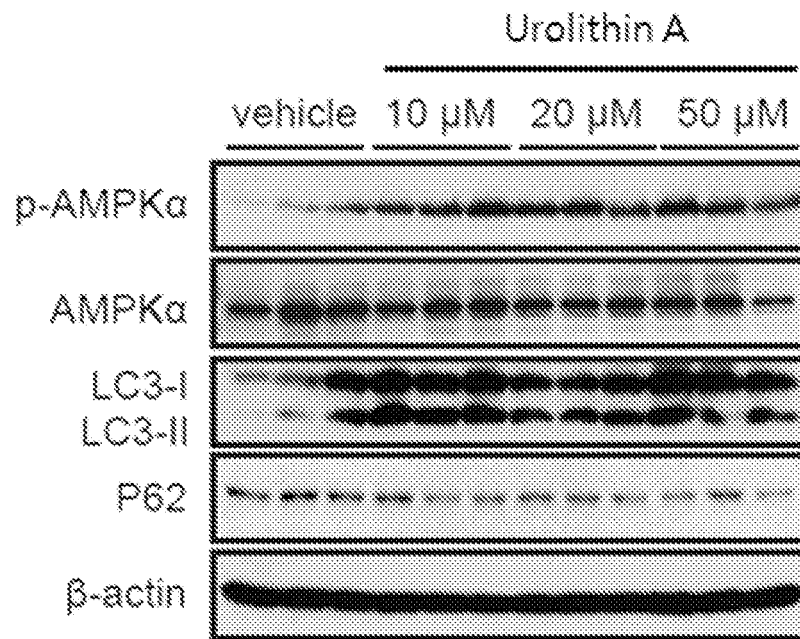


Figure 17

Human Primary Myoblasts

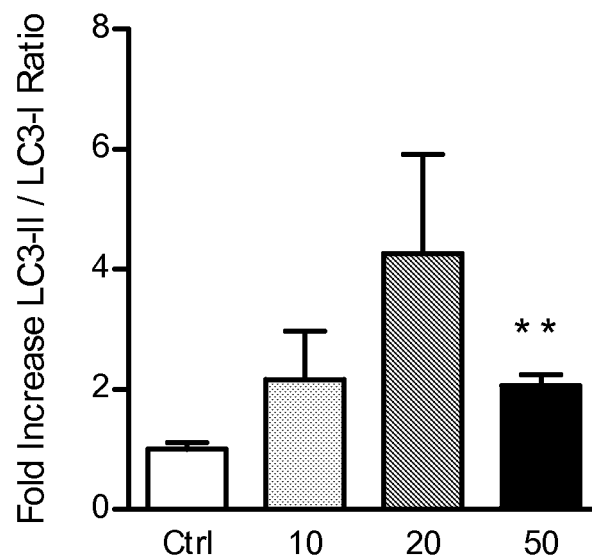
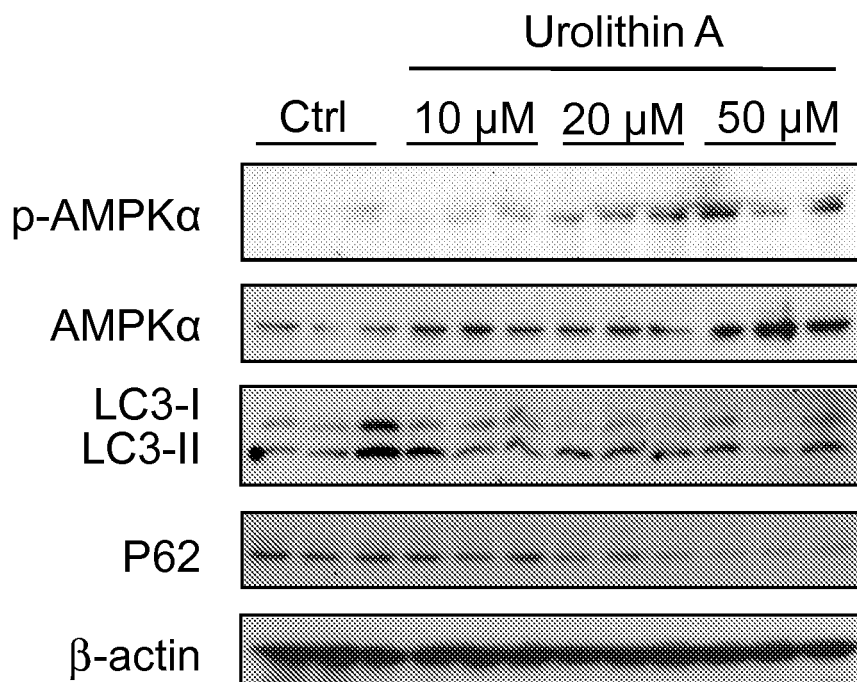


Figure 18

Human Primary Aortic Endothelial Cells

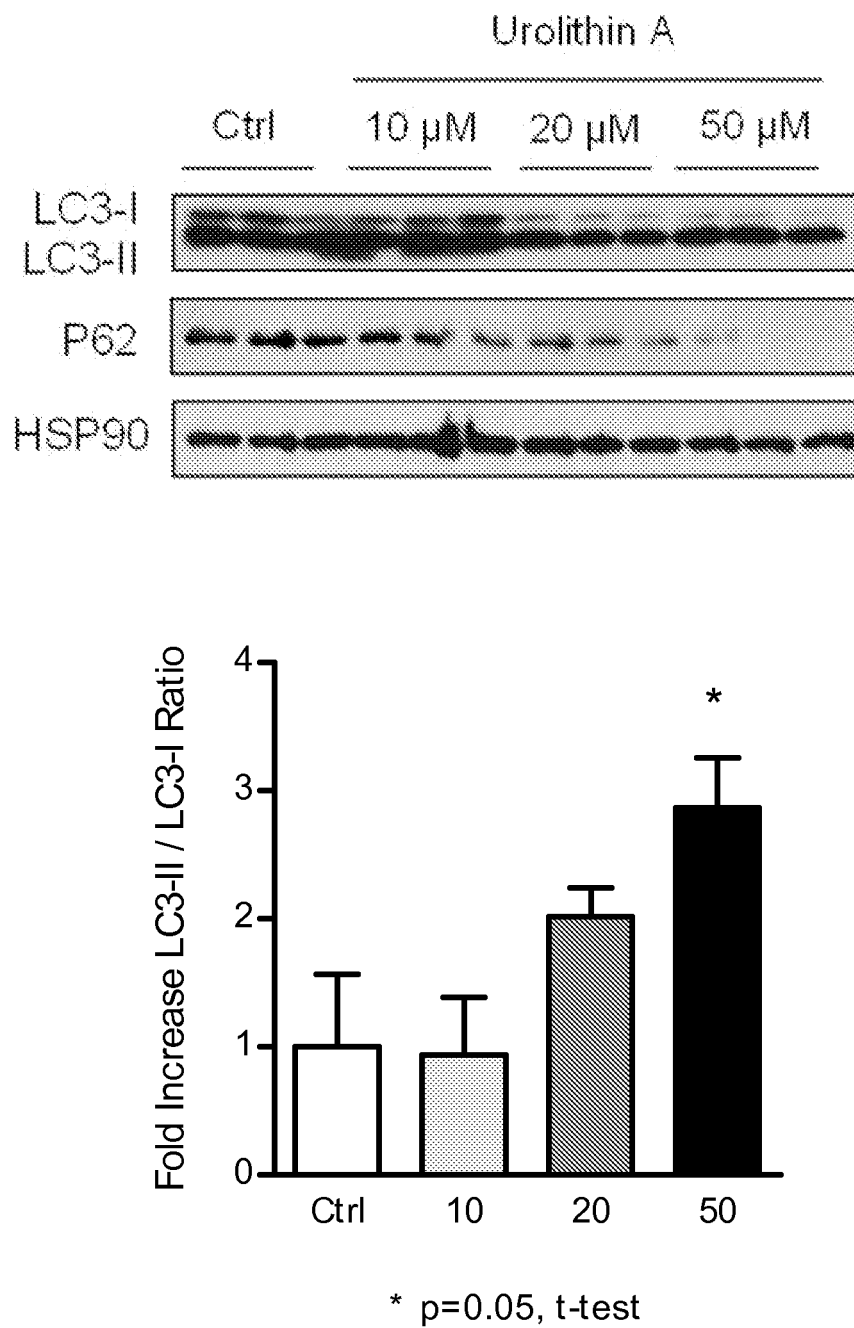


Figure 19

Mouse liver following urolithin A treatment

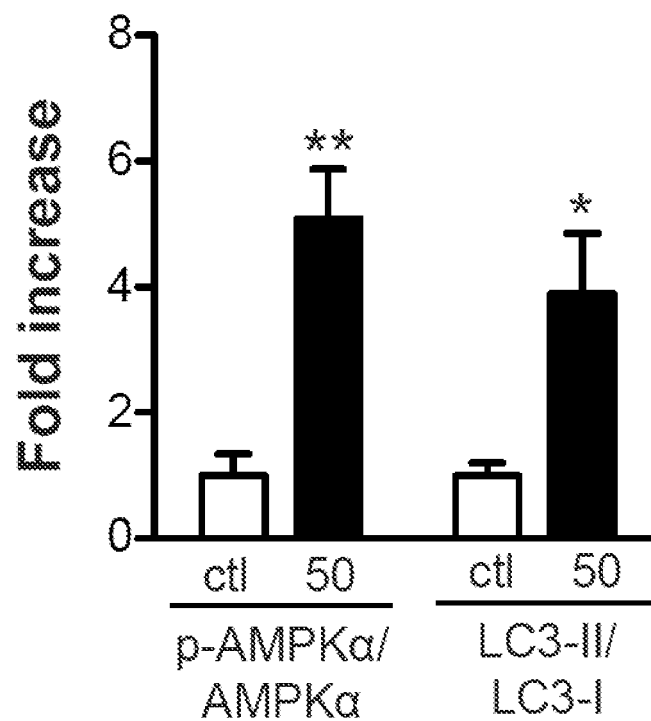
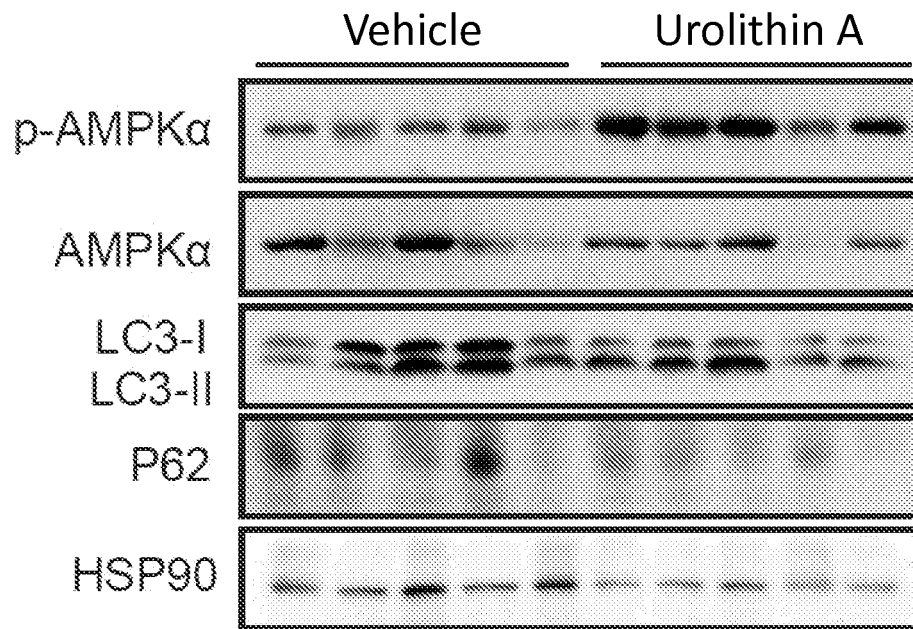


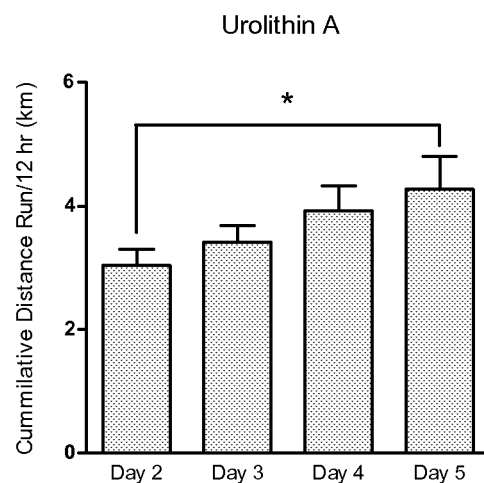
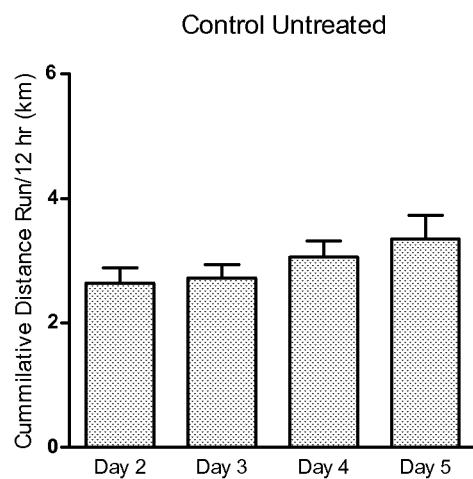
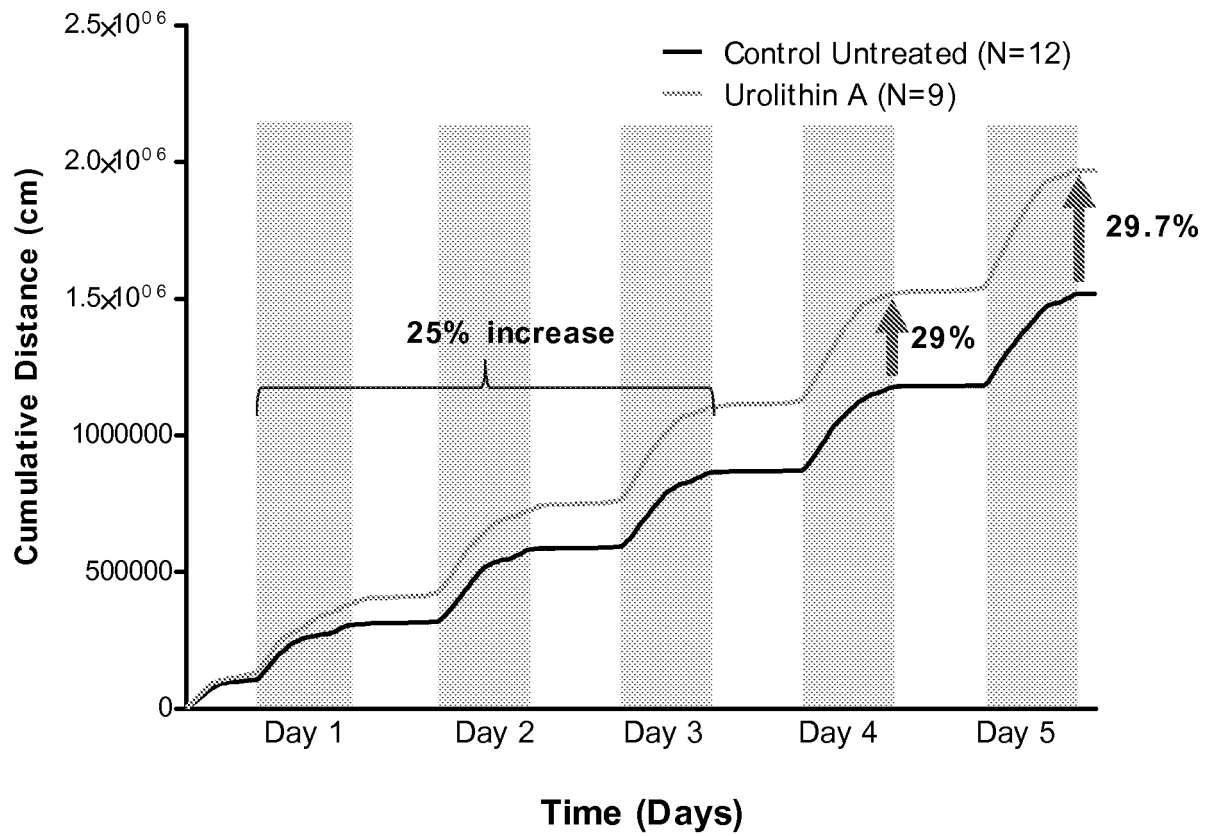
Figure 20Control vs Urolithin A, * $p < 0.05$, 2 way ANOVA* $p < 0.05$, t-test

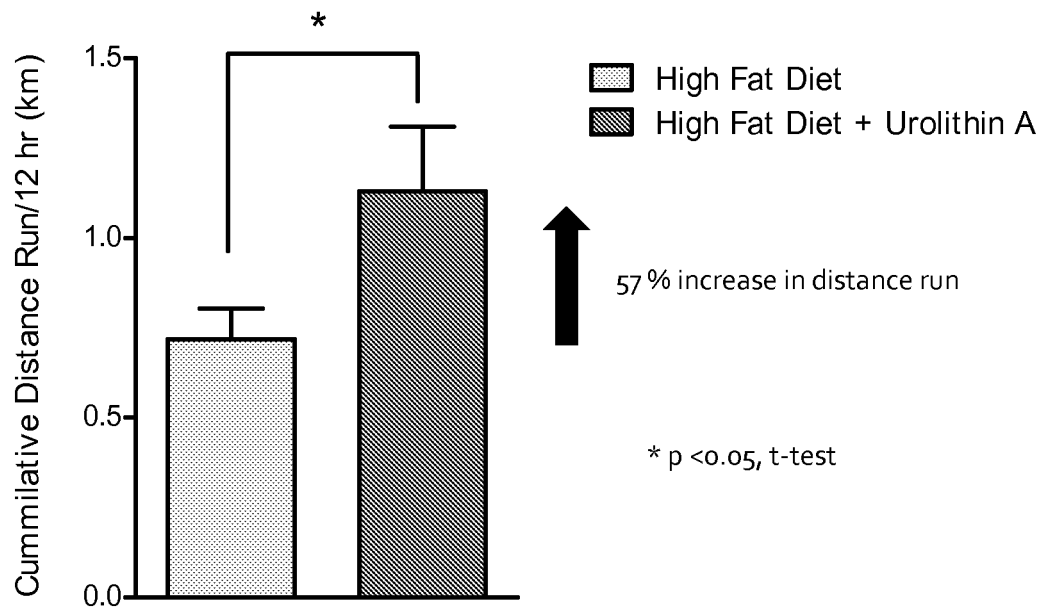
Figure 21

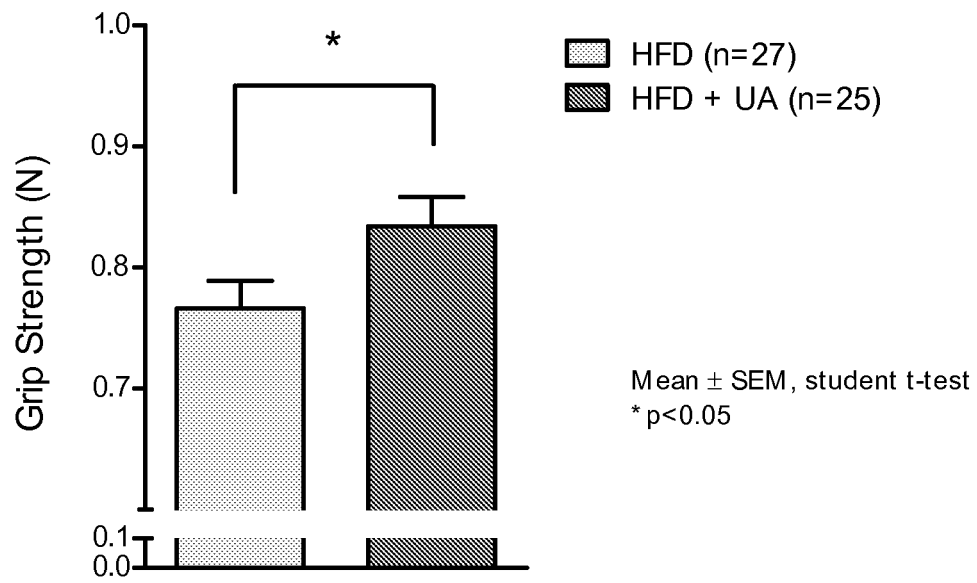
Figure 22

Figure 23

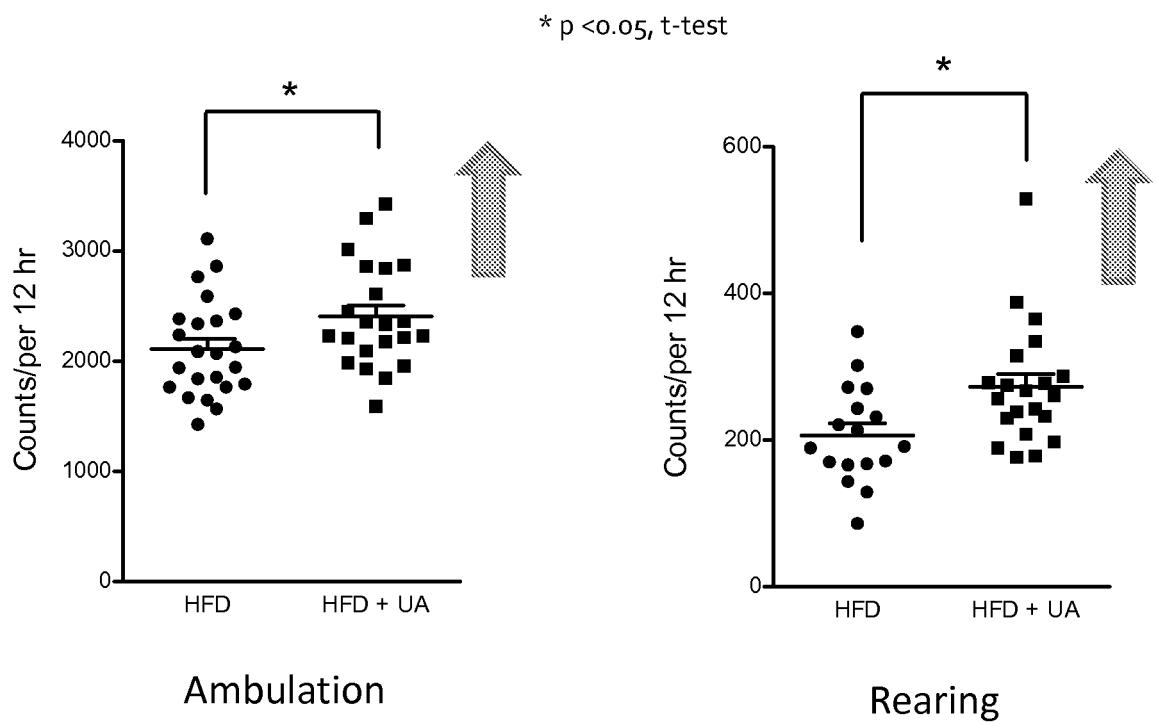
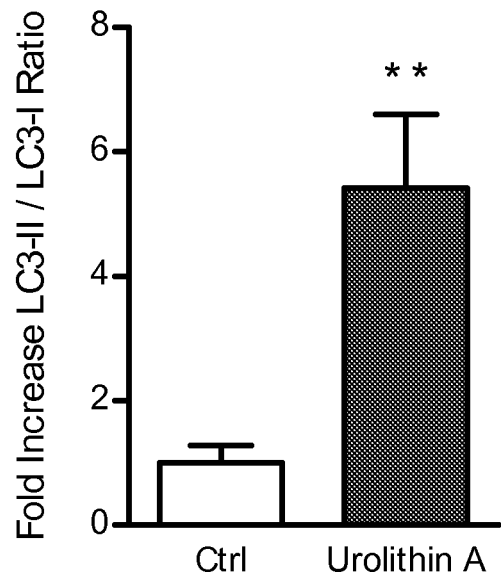
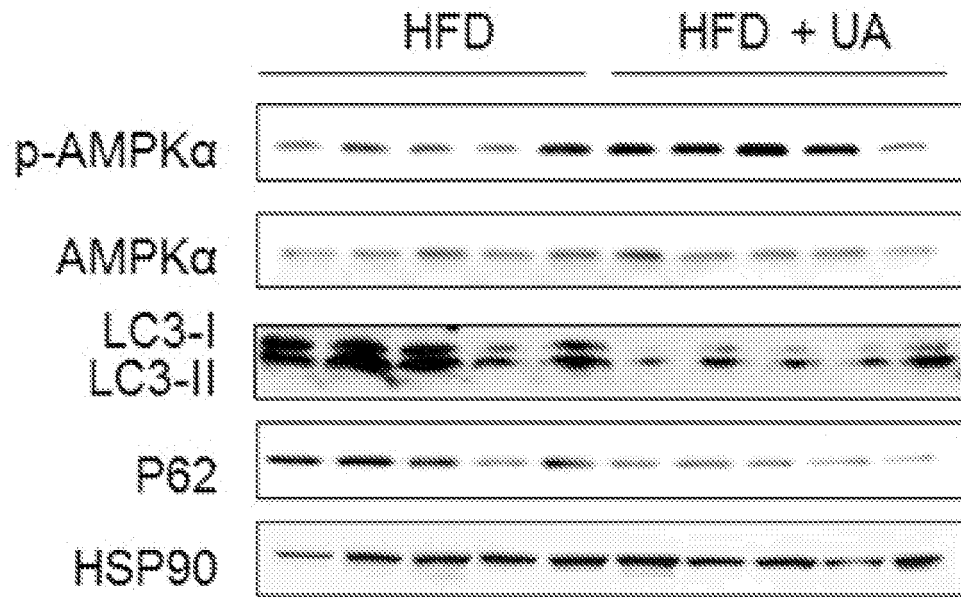


Figure 24

Mouse Gastrocnemius Muscle



** p<0.01, t-test

Figure 25

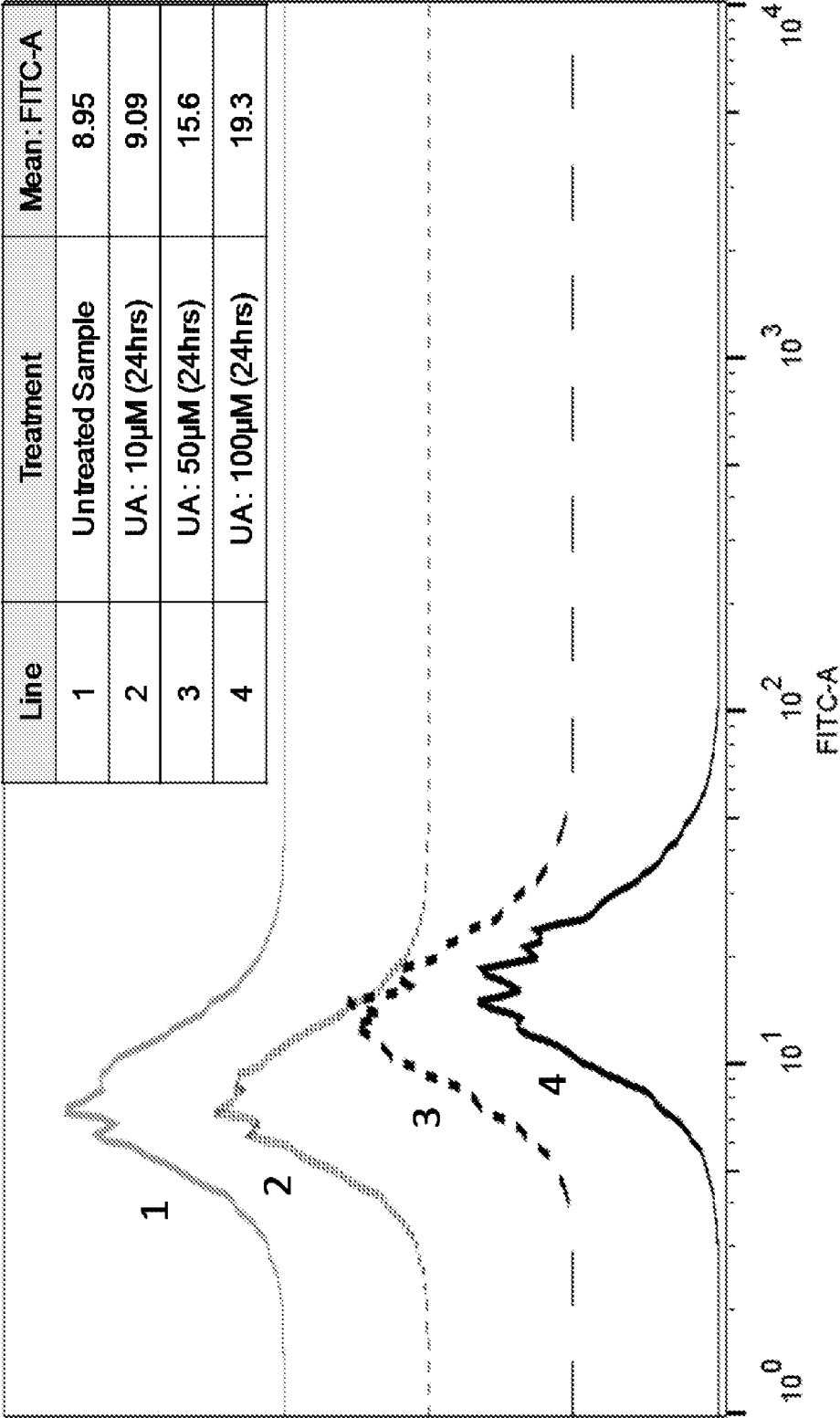
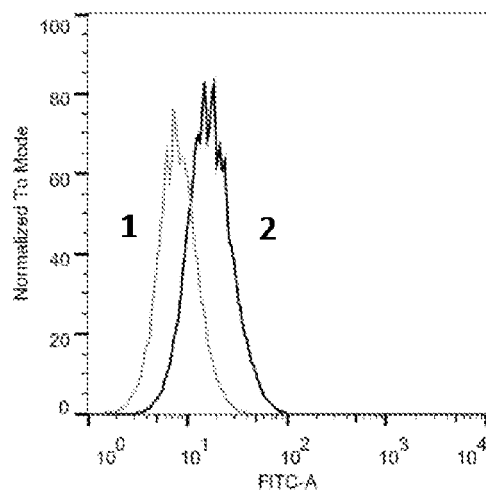
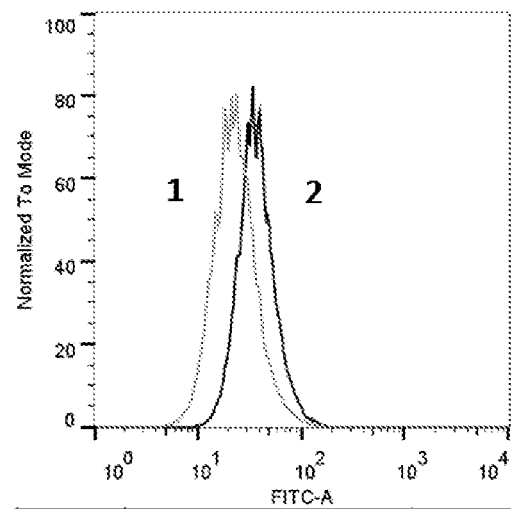


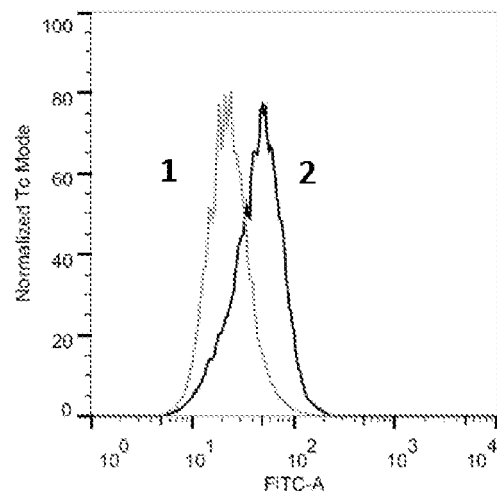
Figure 26



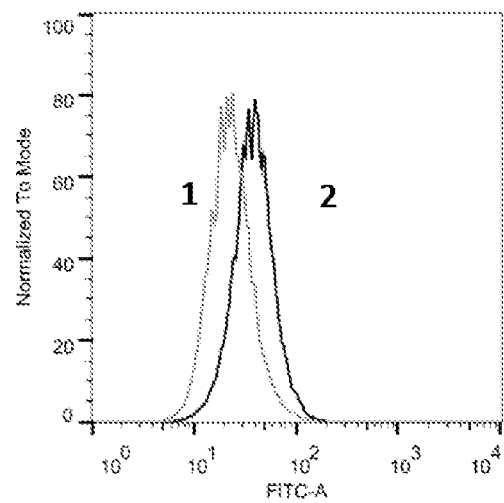
Line	C2C12 Cell Treatment	HTC-A
1	Untreated Control	8.95
2	UA : 100 μ M (24hrs)	19.3



Line	C2C12 Cell Treatment	HTC-A
1	Untreated Control	25.9
2	UB : 100 μ M (24hrs)	40.1



Line	C2C12 Cell Treatment	HTC-A
1	Untreated Control	25.9
2	UC : 100 μ M (24hrs)	49.7



Line	C2C12 Cell Treatment	HTC-A
1	Untreated Control	25.9
2	UD : 100 μ M (24hrs)	41.6

Figure 27

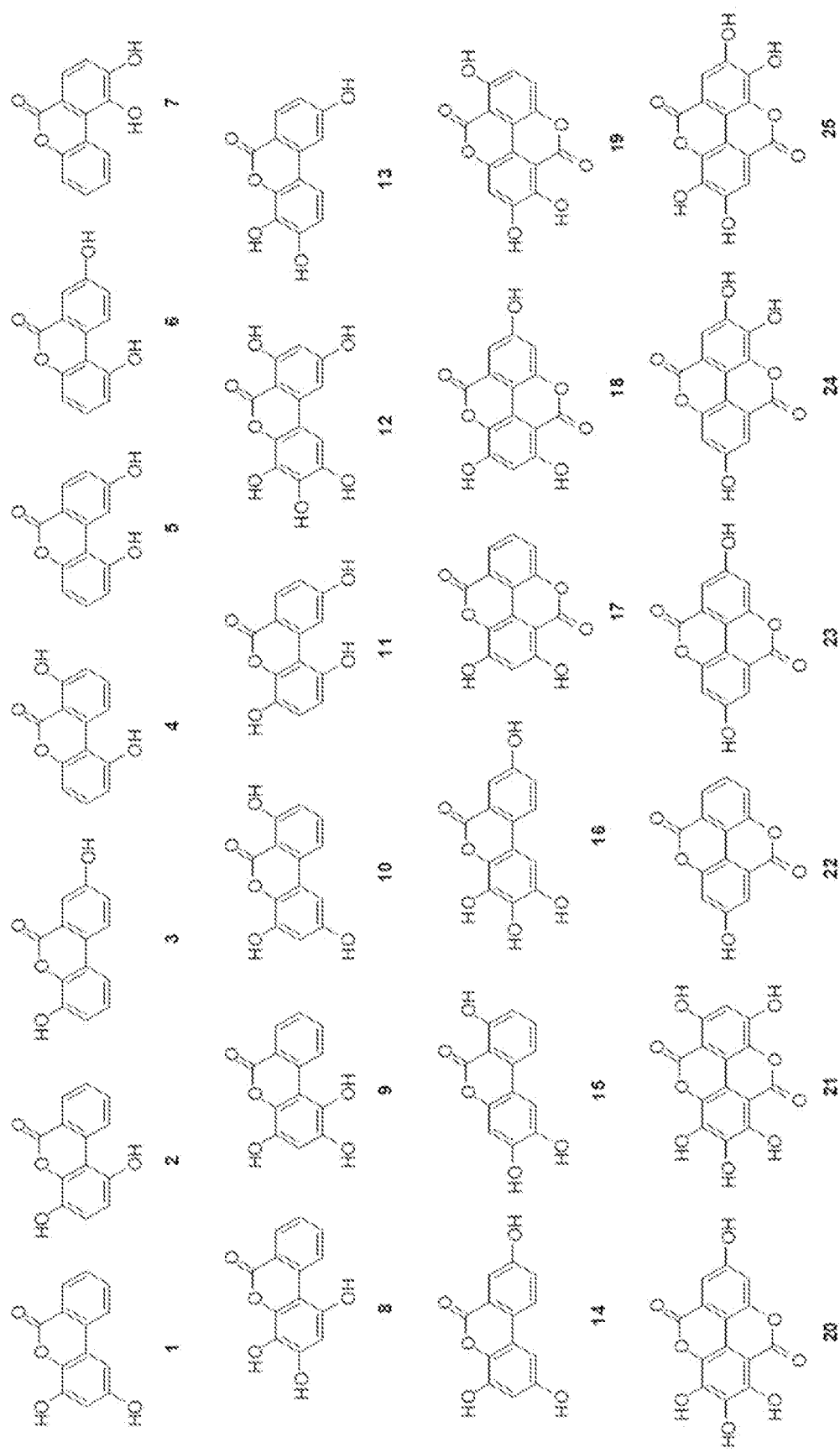
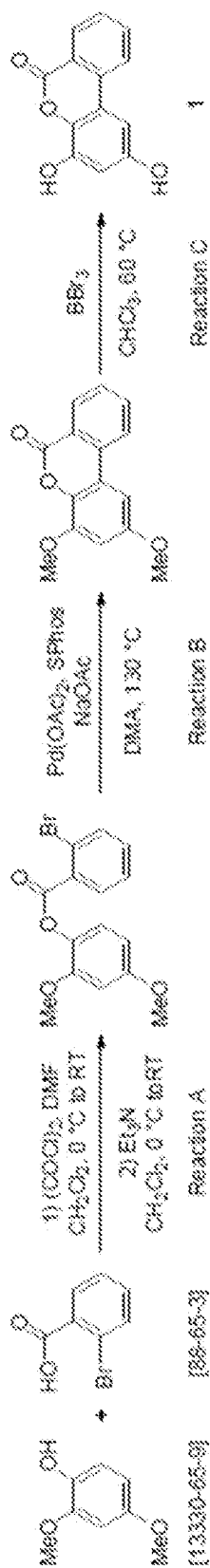


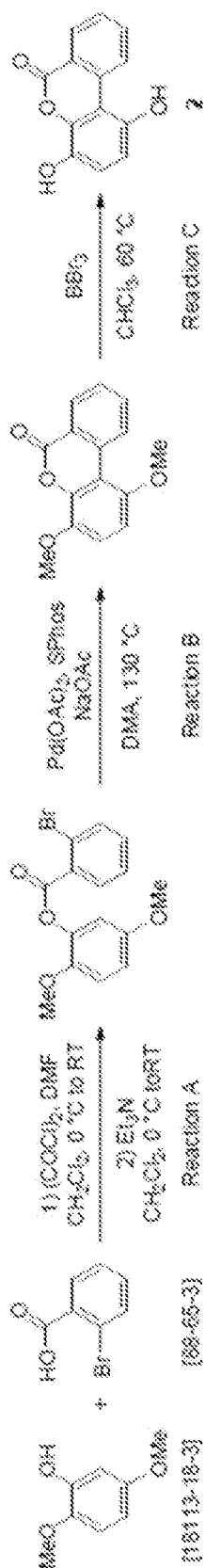
Figure 28

Compound 1



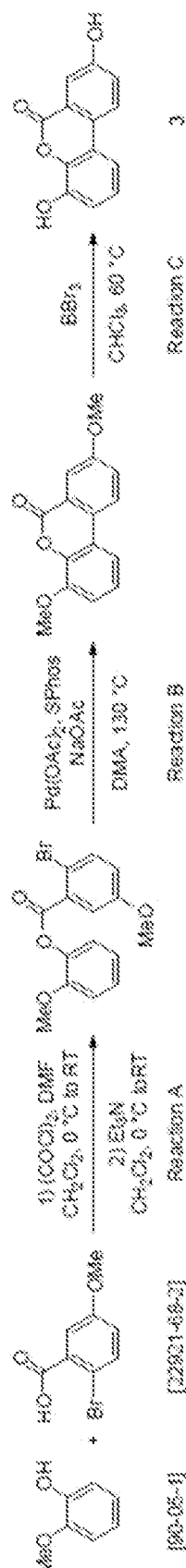
References: Reactions A, B and C

Compound 2



References: Reactions A, B and C

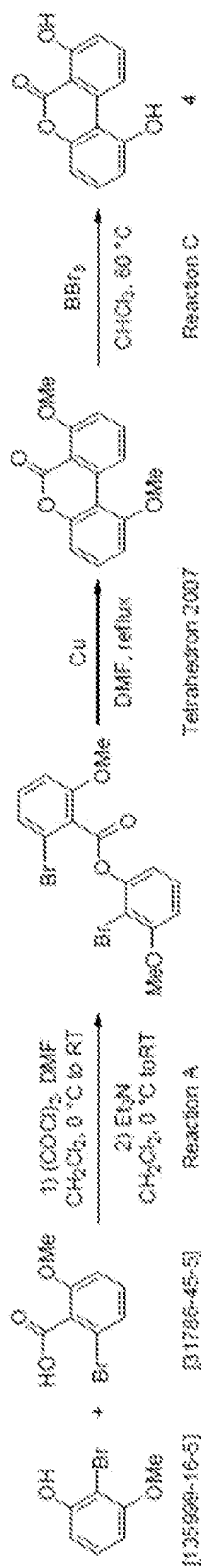
Compound 3



References: Reactions A, B and C

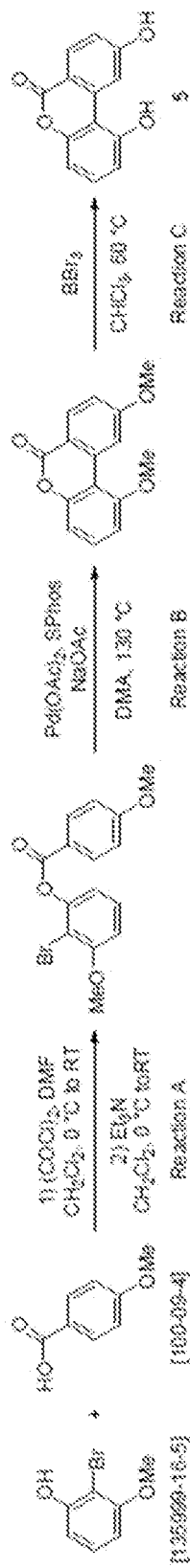
Figure 28 (cont.)

Compound 4



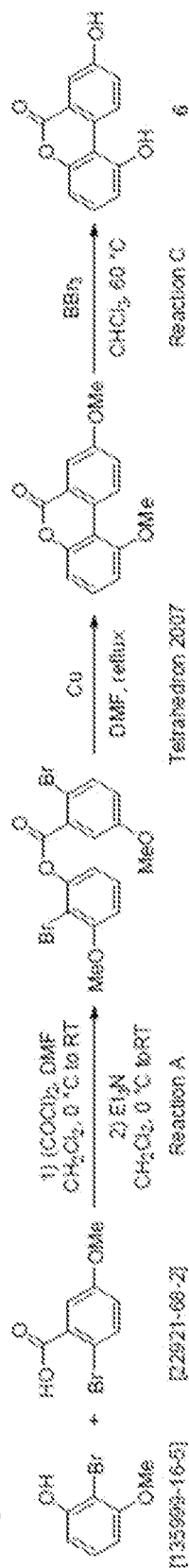
References: Reactions A, C and Tetrahedron 2007, 63, 10454-10465

Compound 5



References: Reactions A, B and C

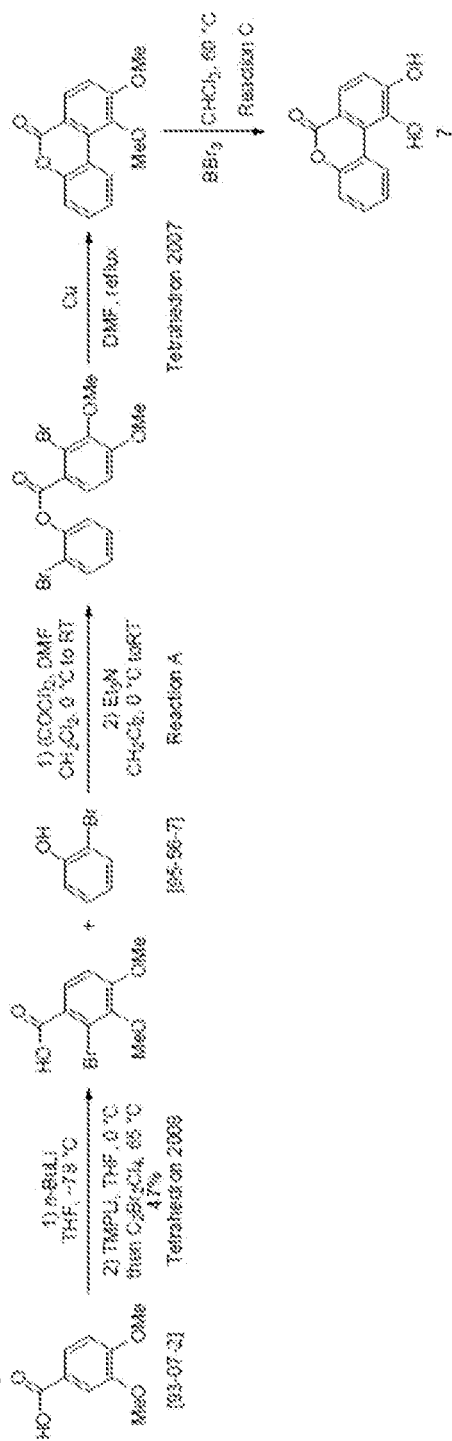
Compound 6



References: Reactions A, C and Tetrahedron 2007, 63, 10454-10465

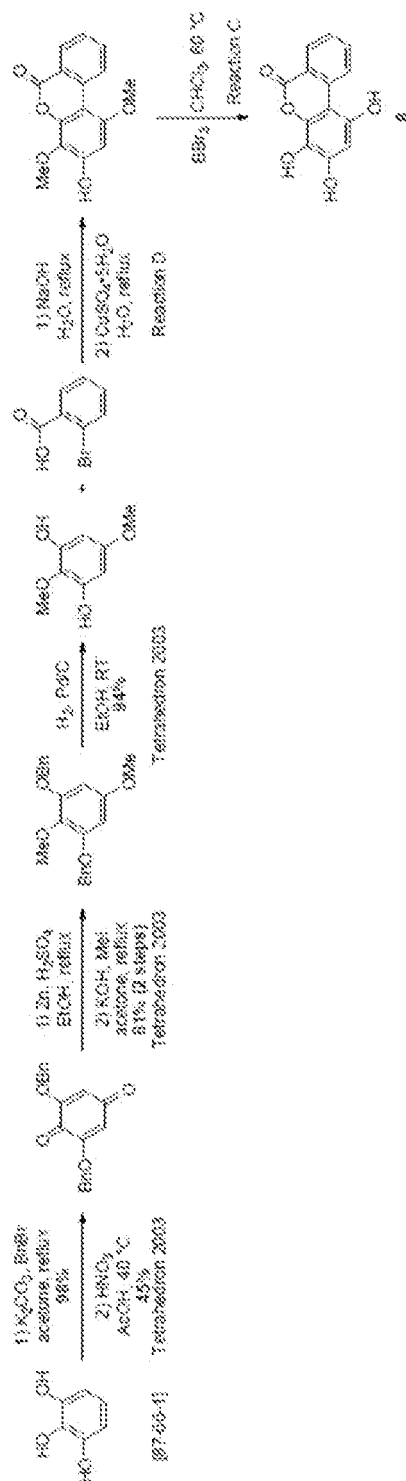
Figure 28 (cont.)

Compound 7



References: Reactions A, C, Tetrahedron 2007, 63, 10454-10465 and Tetrahedron 2008, 64, 10552-10557

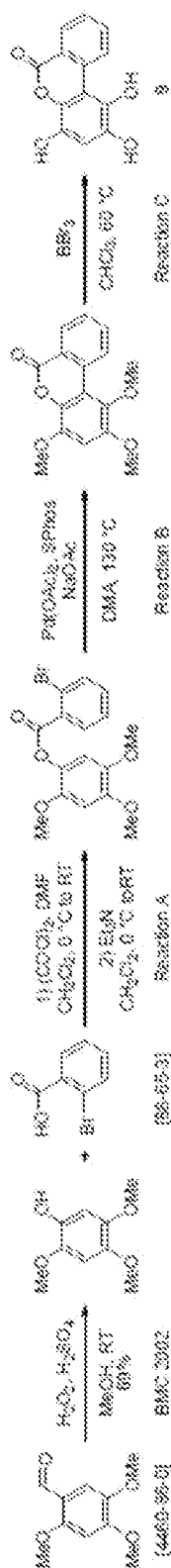
Compound 8



References: Reactions C, D and Tetrahedron 2003, 59, 9872-9887

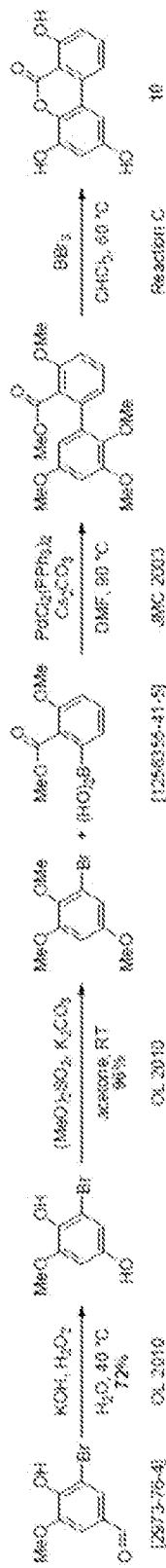
Figure 28 (cont.)

Compound 9



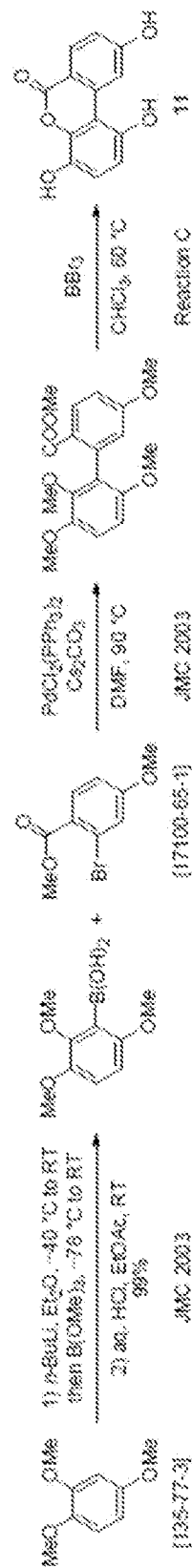
References: Reactions A, B, C and Bioorg. Med. Chem. 2002, 10, 685-690

Compound 10



References: Reaction C, *Org. Lett.* **2010**, *12*, 1428-1431 and *J. Med. Chem.* **2003**, *46*, 1018-1030

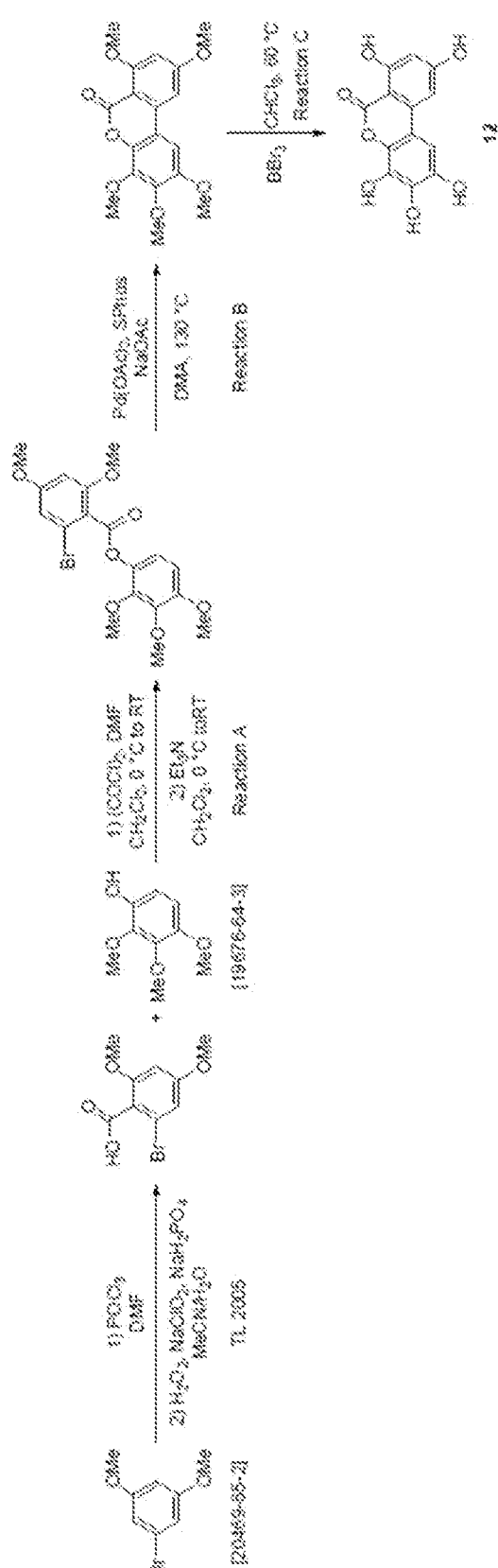
Compound 11



References: Reaction C and J. Med. Chem. 2003, 46, 1016-1030

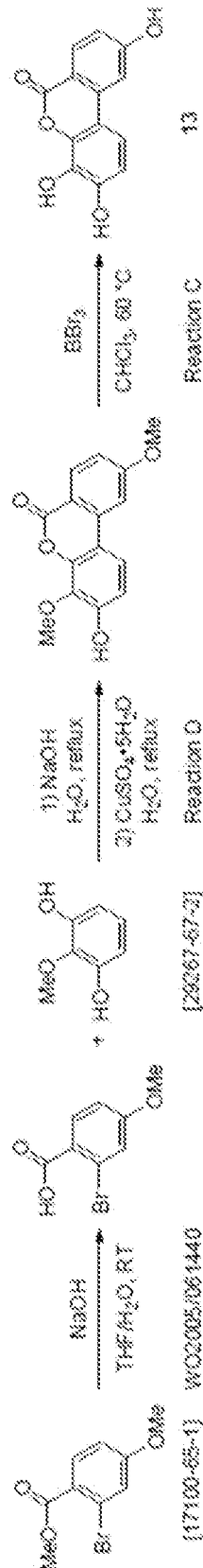
Figure 28 (cont.)

Compound 12



References: Reactions A, B, C and Tetrahedron Lett. 2005, 46, 3197-3200

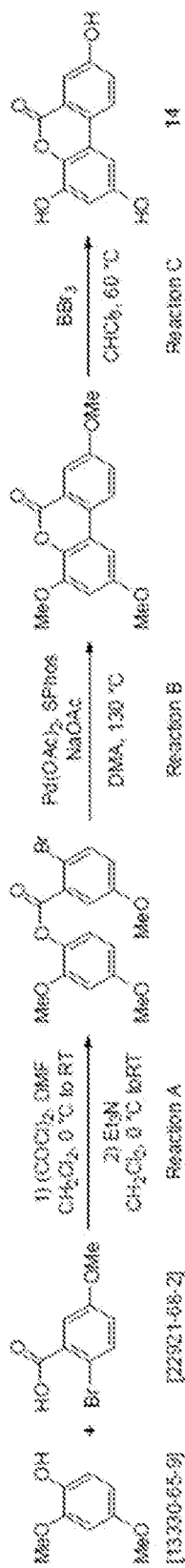
Compound 13



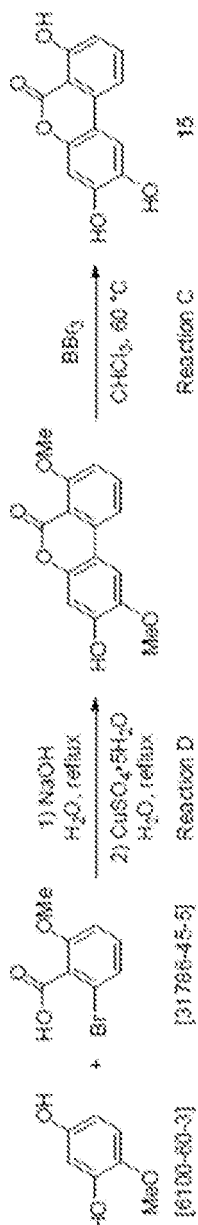
References: Reactions C, D and WO2005/061440 A1, p. 27

Figure 28 (cont.)

Compound 14



Compound 15



Compound 16

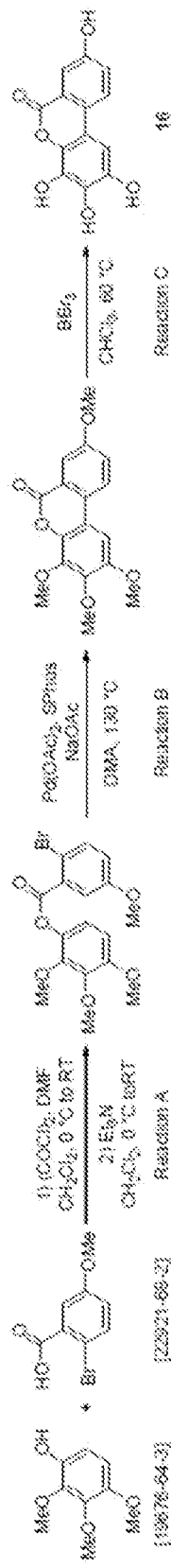
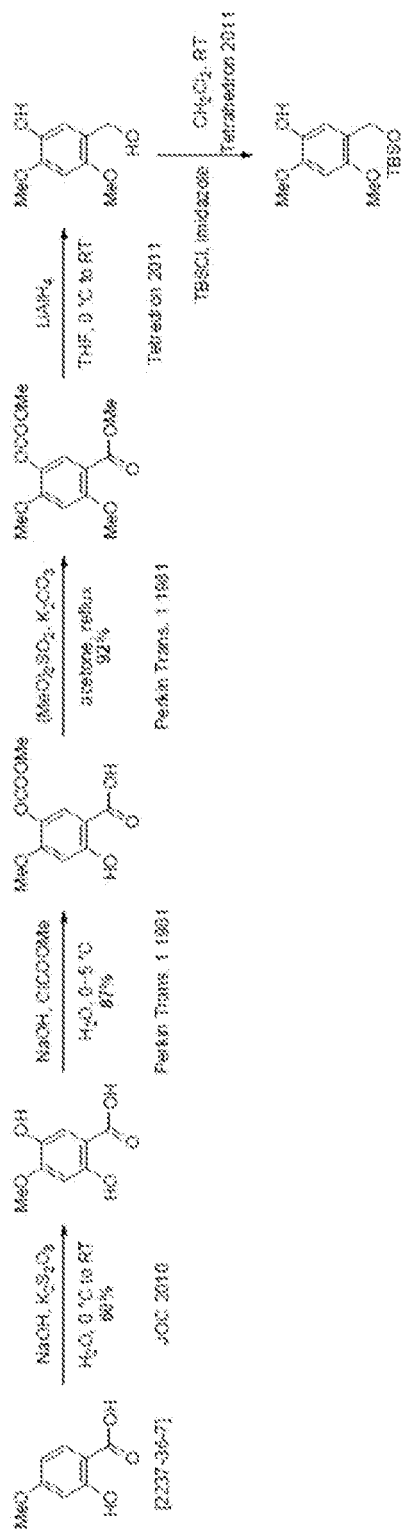
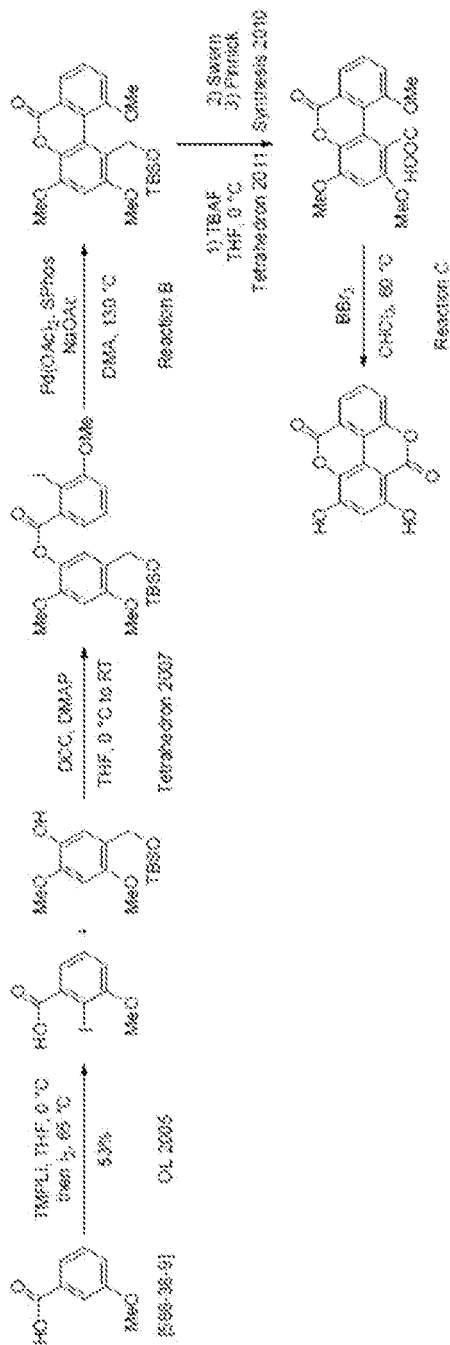


Figure 28 (cont.)

Compounds 17 & 18



References: J. Org. Chem. 2010, 75, 5725-5728, J. Chem. Soc., Perkin Trans. 1 1981, 3205-3213, Tetrahedron 2011, 67, 1960-1970 and Tetrahedron 2011, 67, 3804-3814



References: Reactions B, C, Org. Lett. 2005, 7, 2445-2448, Tetrahedron 2007, 63, 10454-10455, Tetrahedron 2011, 67, 3904-3914 and Synthesis 2010, 3736-3740

Figure 28 (cont.)

Compounds 17 & 18 (cont.)

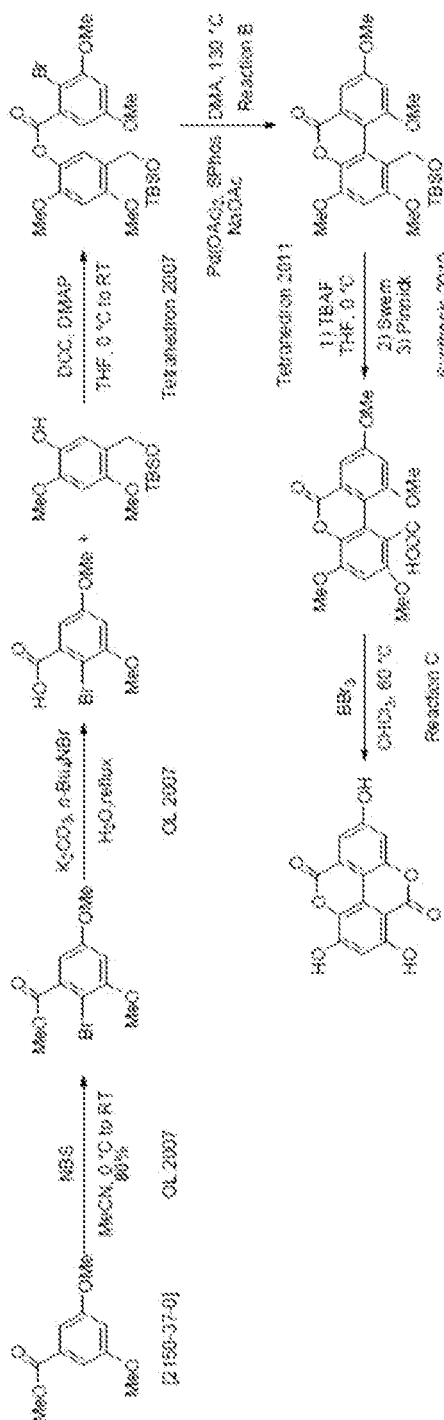
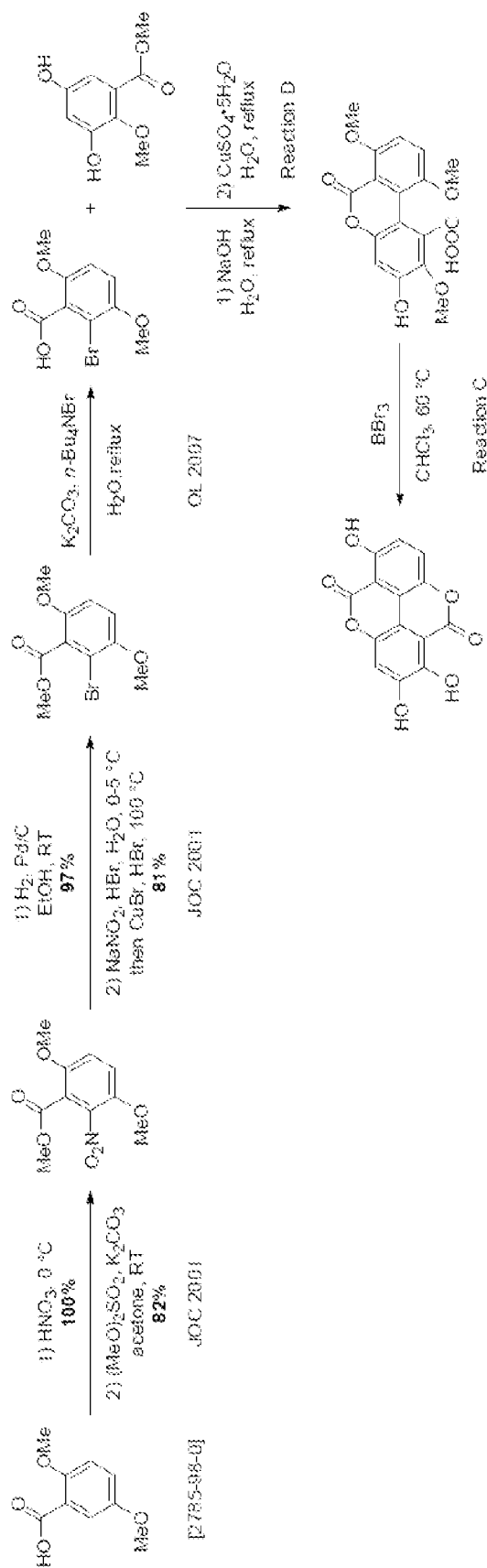


Figure 28 (cont.)

Compound 19

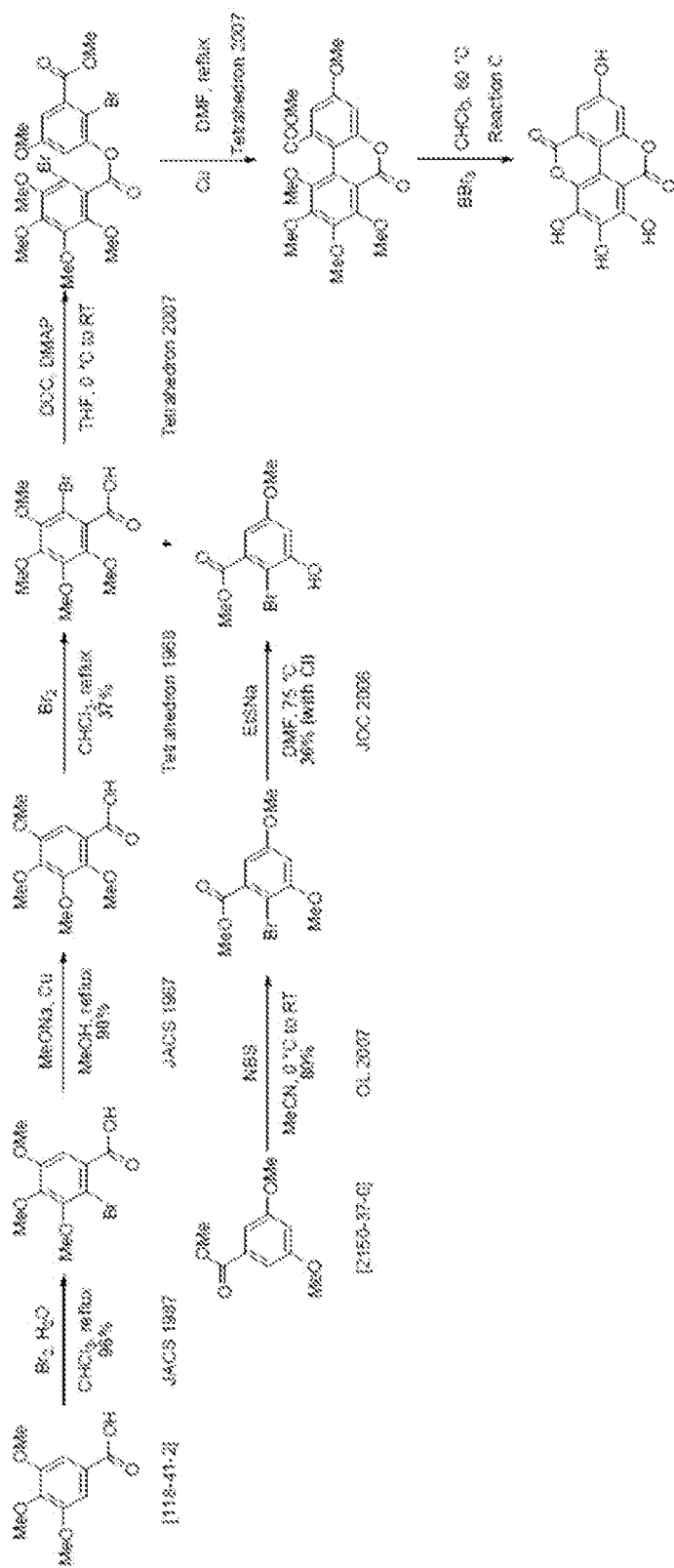


19

References: *Reactions C, D, J. Org. Chem.* **2001**, 66, 954-961 and *Org. Lett.* **2007**, 9, 2831-2833

Figure 28 (cont.)

Compound 20

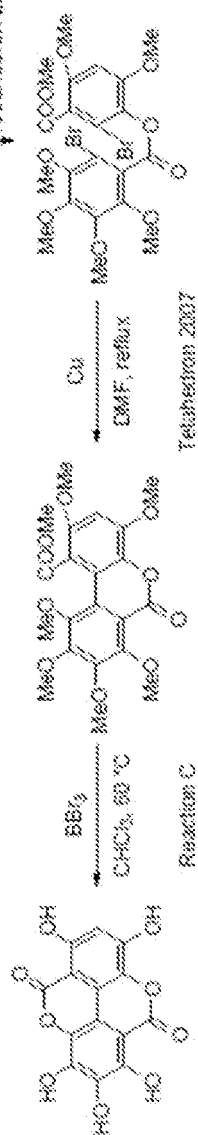
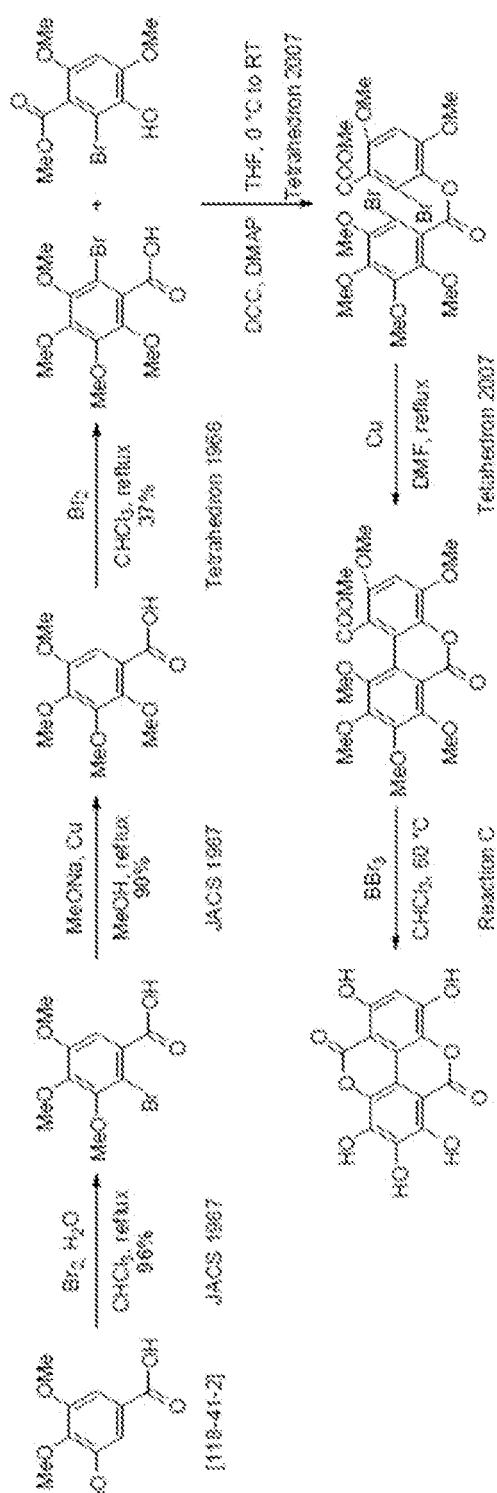


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References Reaction C, *J. Am. Chem. Soc.* **1987**, *109*, 5448-5452; *Tetrahedron* **1988**, *24*, 3407-3416; *Org. Lett.* **2007**, *9*, 2831-2833; *J. Org. Chem.* **2008**, *73*, 6849-6852 and *Tetrahedron* **2007**, *63*, 10454-10465.

Figure 28 (cont.)

Compound 21

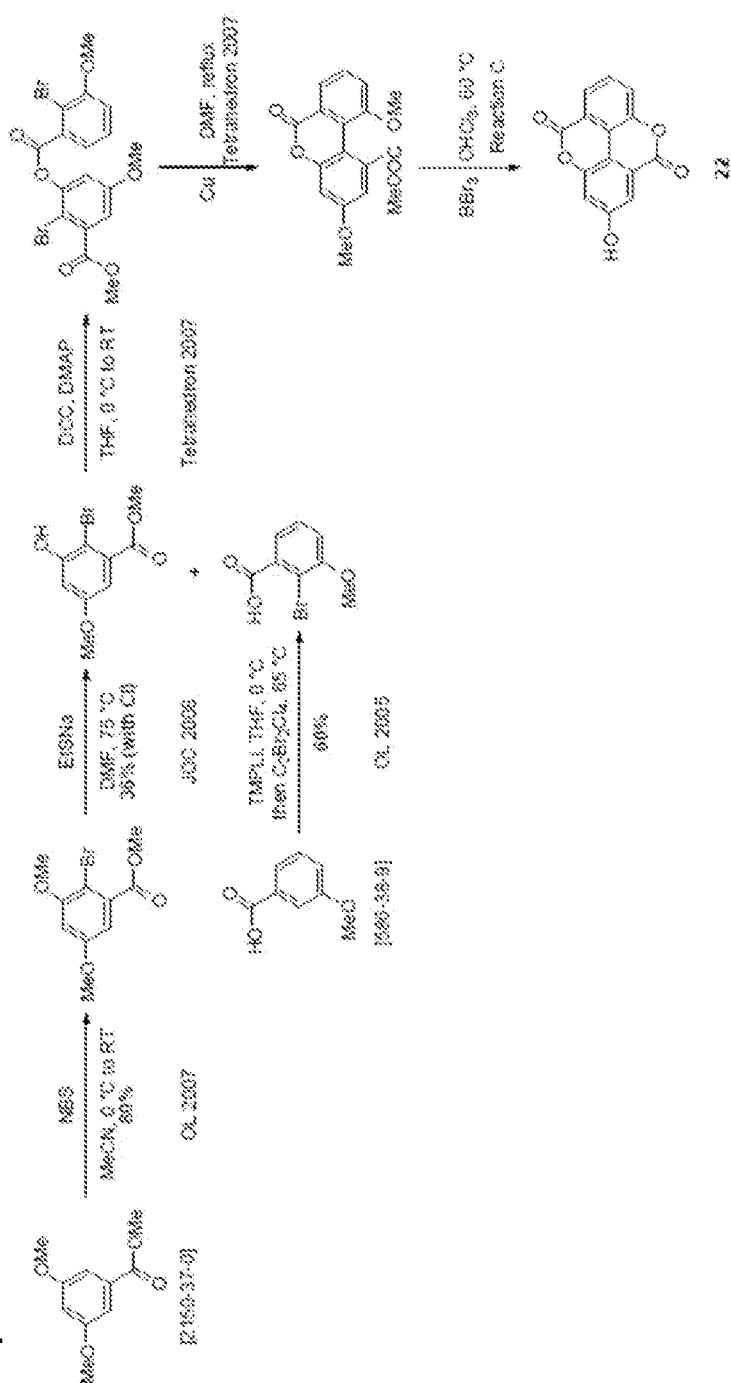


21

Reference: Reaction C, *J. Am. Chem. Soc.* **1967**, 109, 5446-5452, *Tetrahedron* **1968**, 24, 3407-3416 and *Tetrahedron* **2007**, 63, 10454-10465

Figure 28 (cont.)

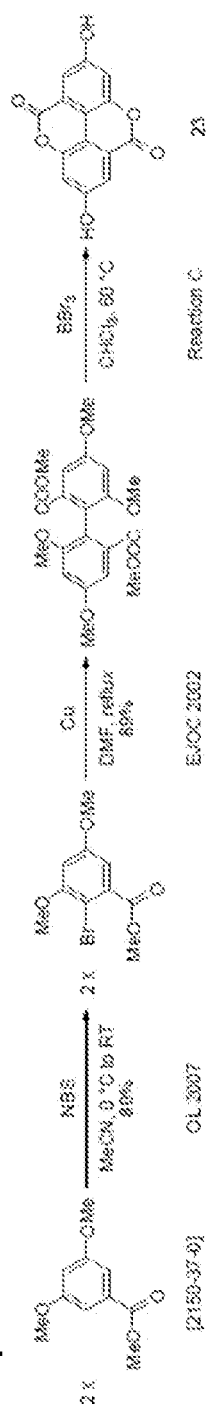
Compound 22



References: Reaction C, *Org. Lett.* **2007**, *9*, 2631-2633, *J. Org. Chem.* **2008**, *73*, 6949-6952, *Org. Lett.* **2005**, *7*, 2445-2448, and *Tetrahedron* **2007**, *63*, 10454-10465

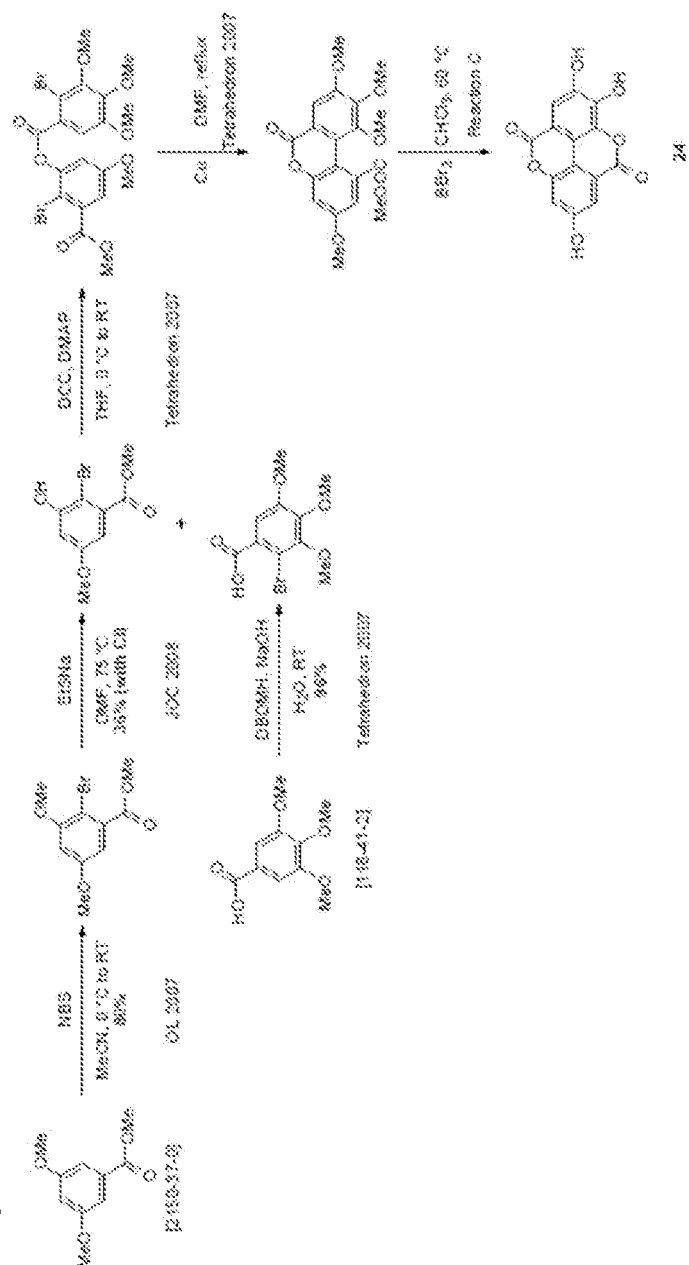
Figure 28 (cont.)

Compound 23



References: Reaction C, *Org. Lett.* **2007**, 9, 2831-2833 and *Eur. J. Org. Chem.* **2002**, 1096-1106

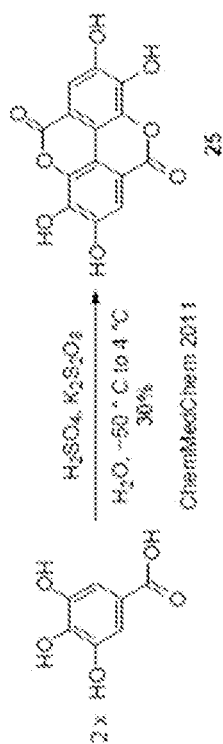
Compound 24



References: Reaction C, *Org. Lett.* **2007**, 9, 2831-2833, *J. Org. Chem.* **2008**, 73, 6849-6852 and *Tetrahedron* **2007**, 63, 10454-10465

Figure 28 (cont.)

Compound 25



References: [ChemMedChem 2011, 6, 2273-2286](#)