

Figure 1

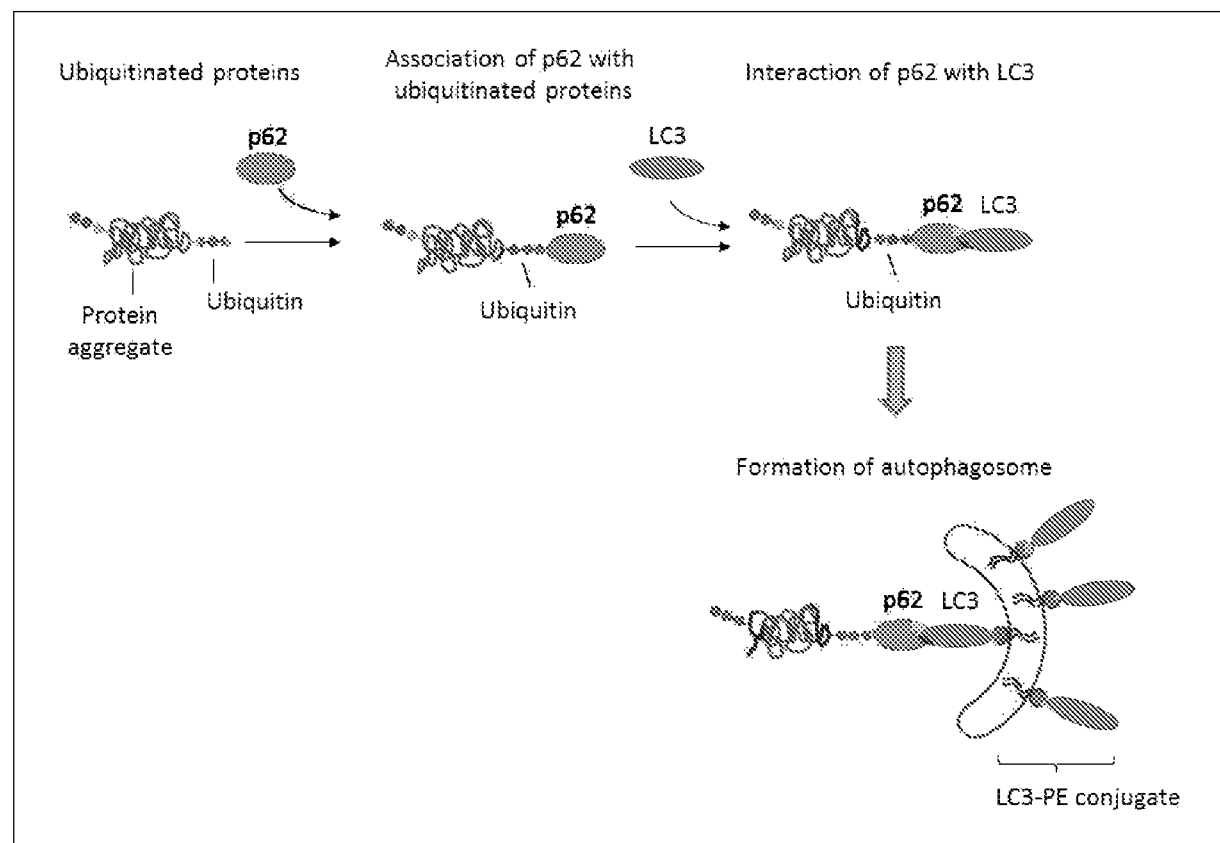
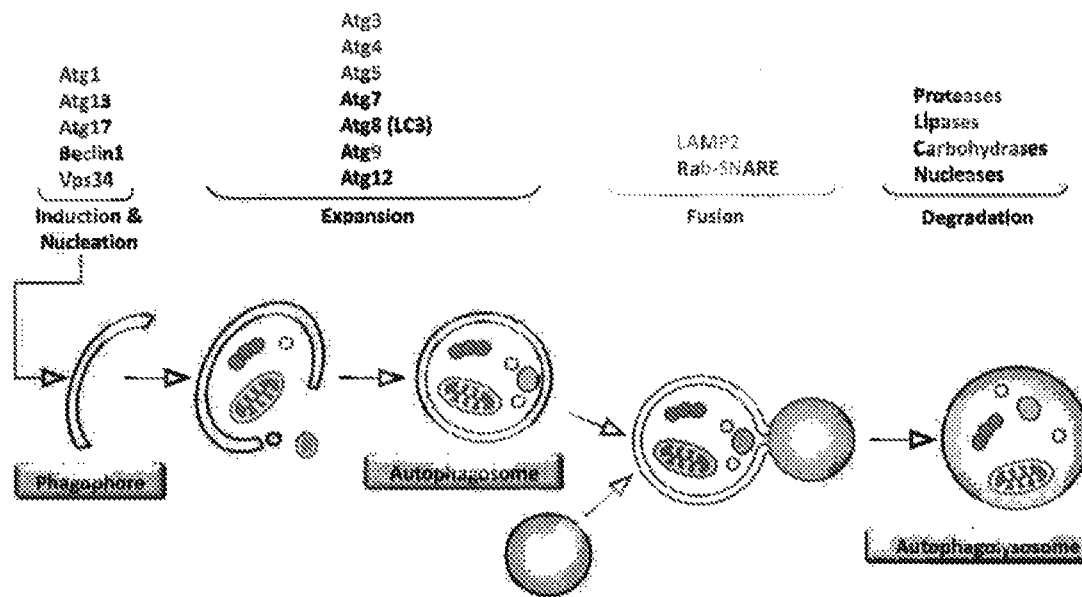
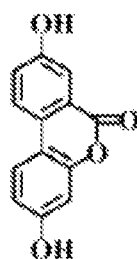
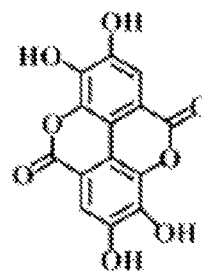
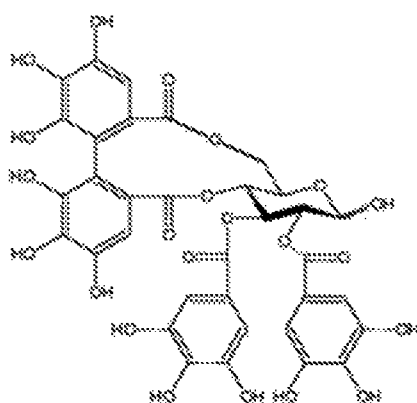


Figure 2

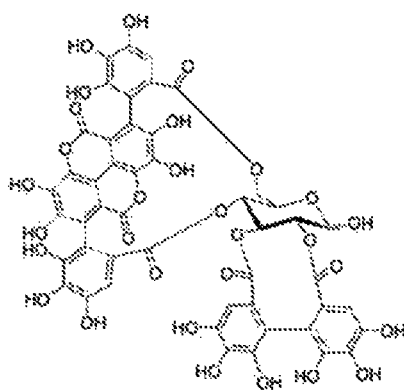
Urolithin A (UA)



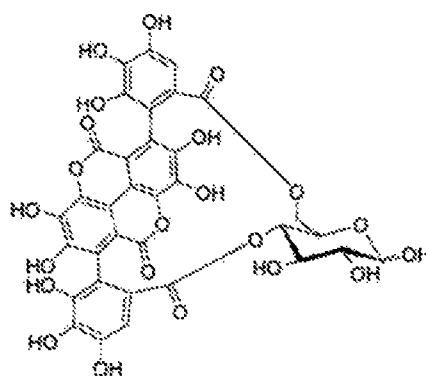
Ellagic Acid (EA)



Tellimagrandin (TL)



Punicalagin (PA)



Punicalin (PB)

Figure 3

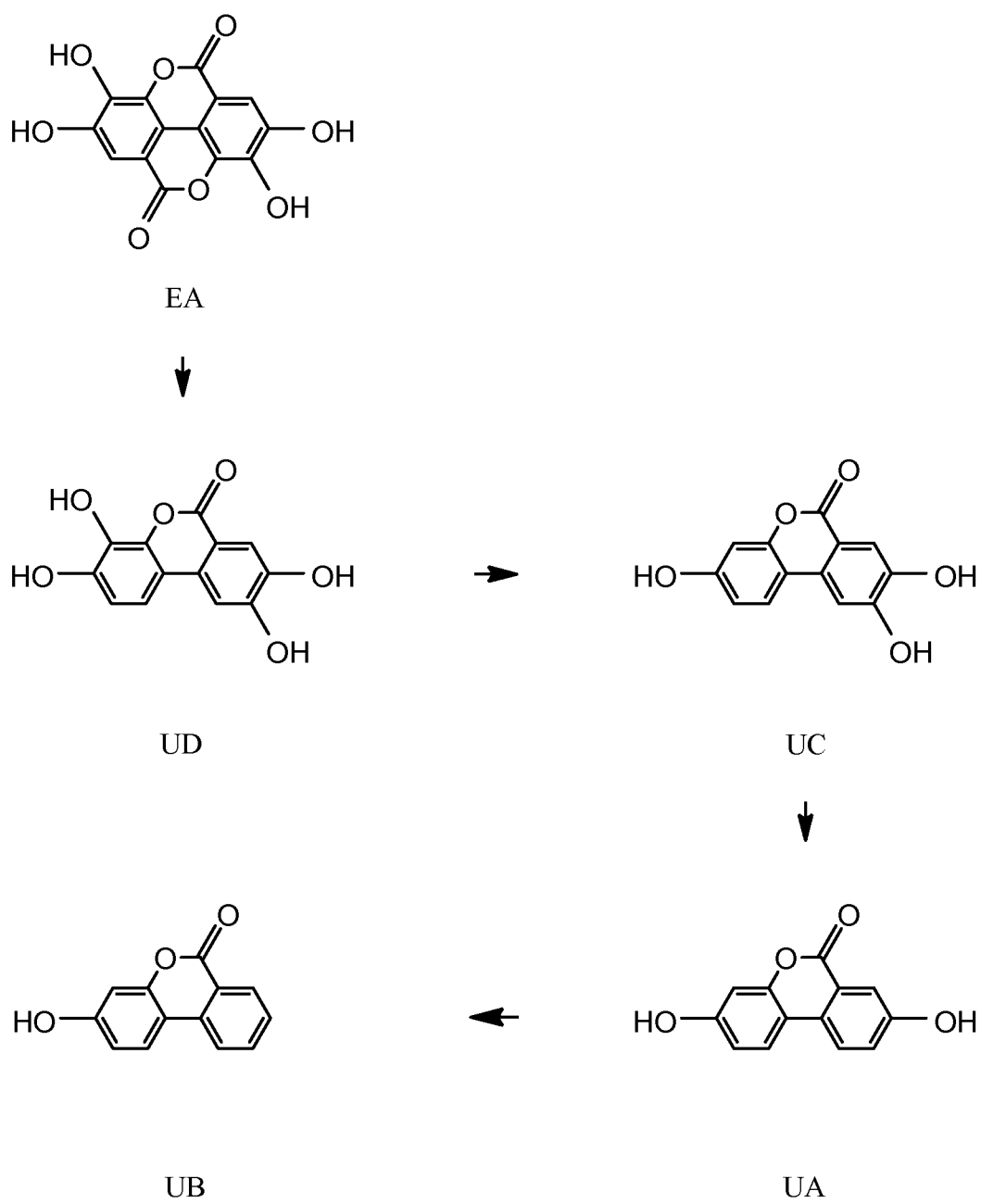


Figure 4

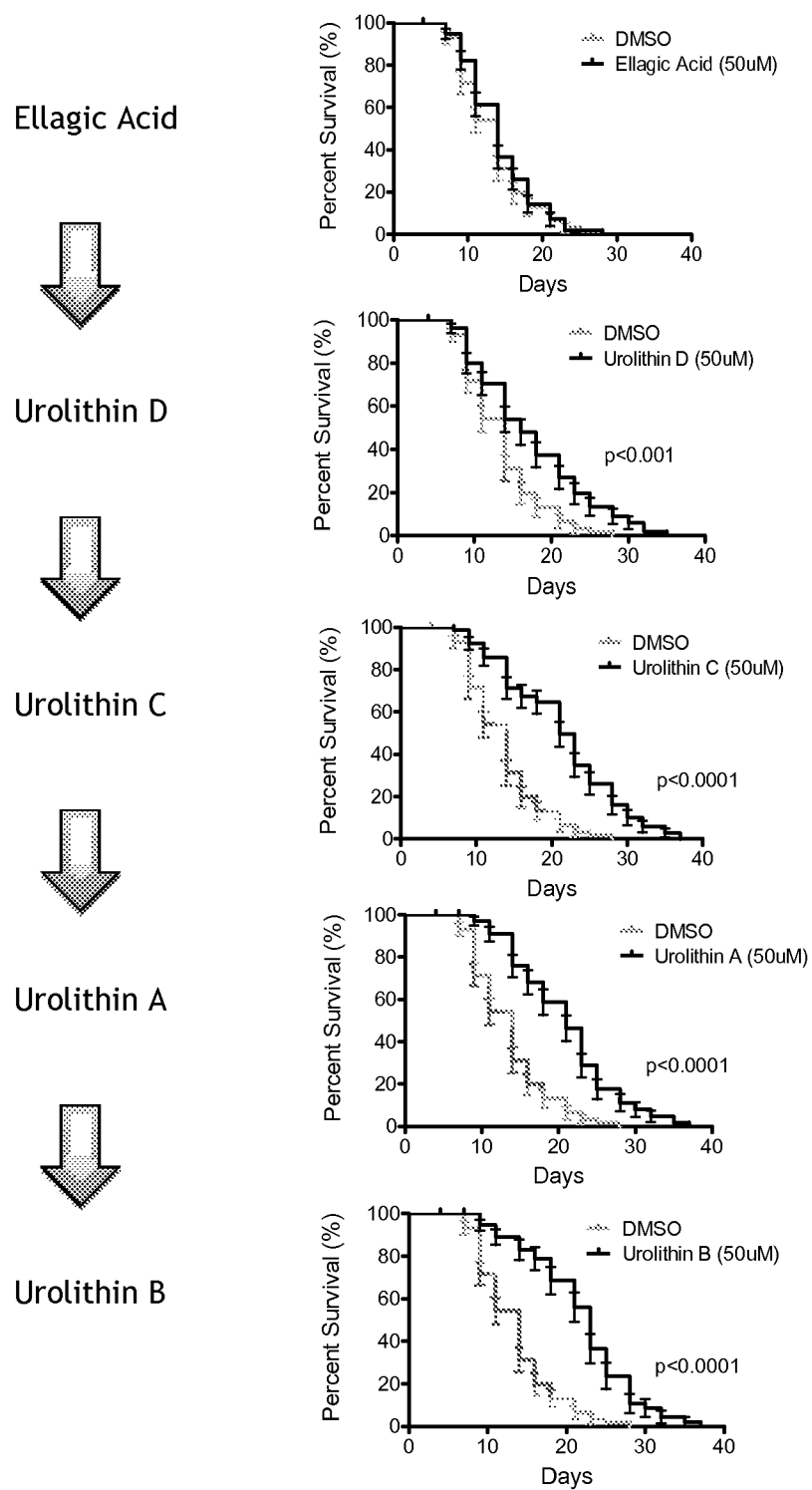


Figure 5

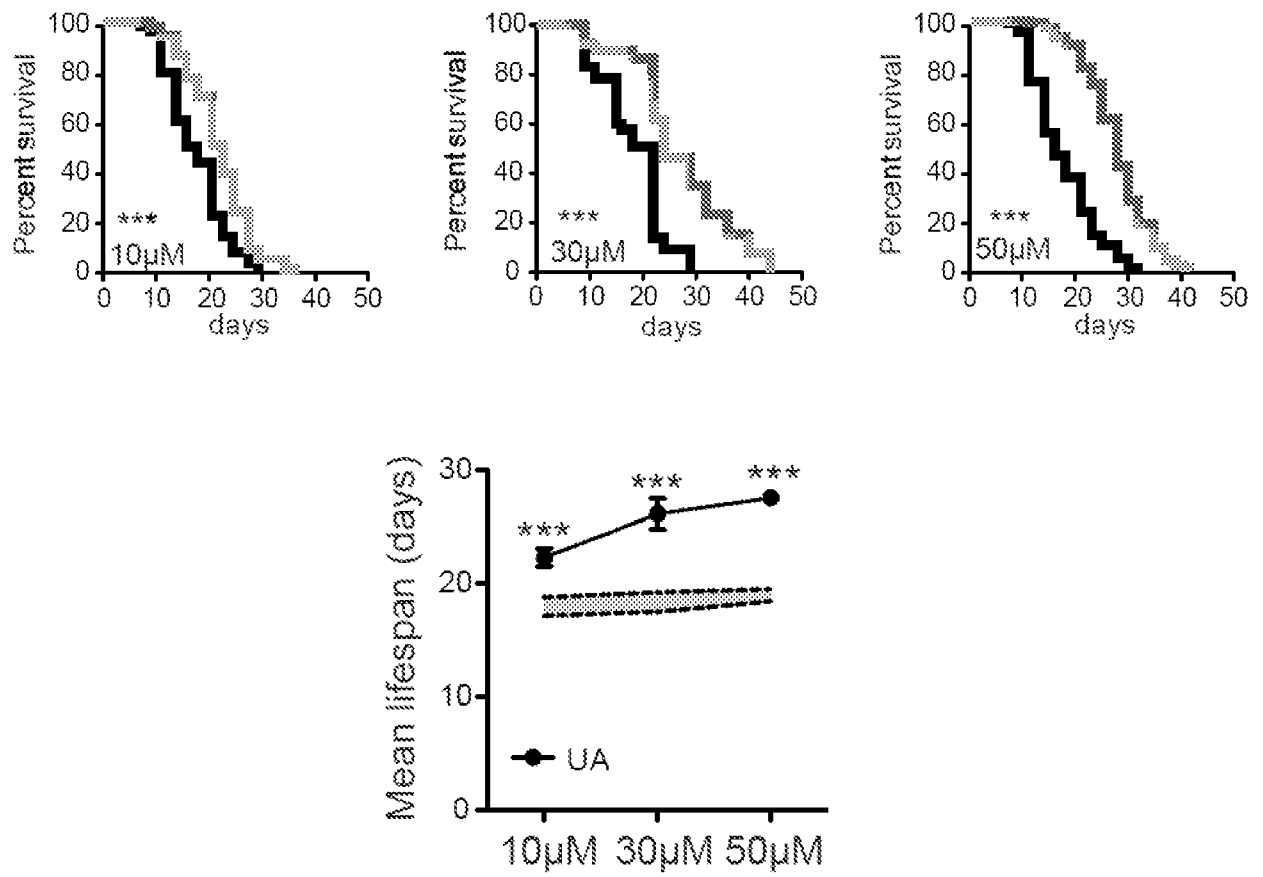


Figure 6

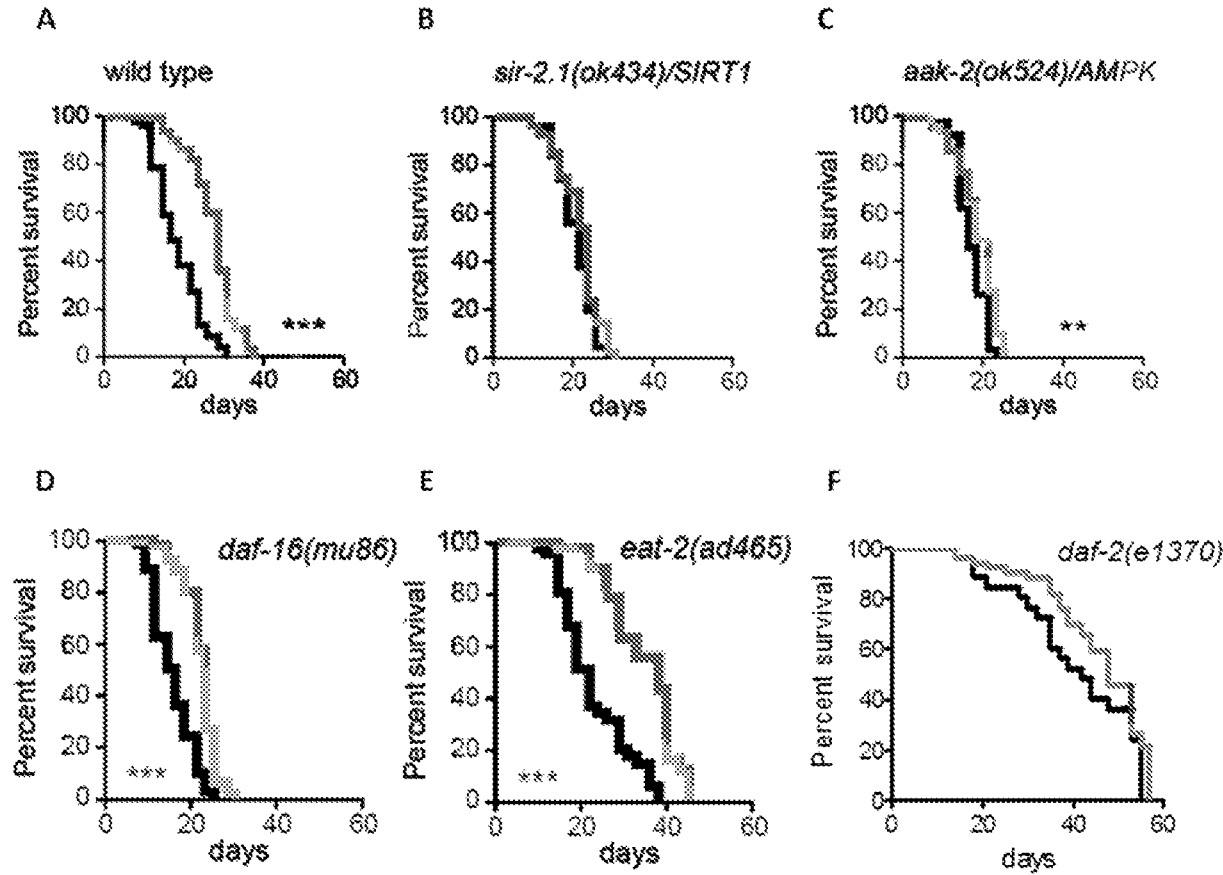


Figure 7

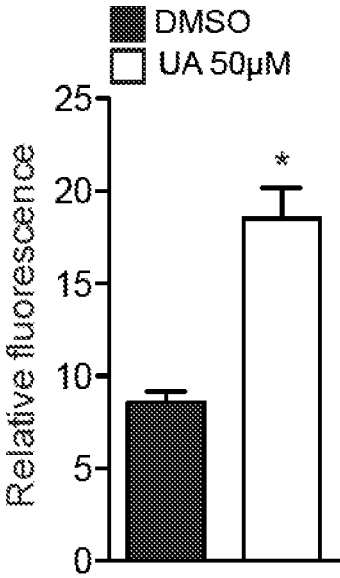
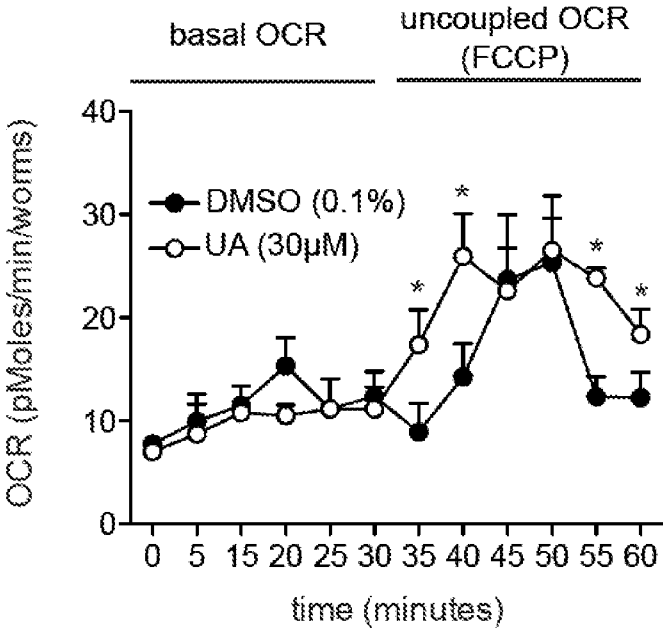
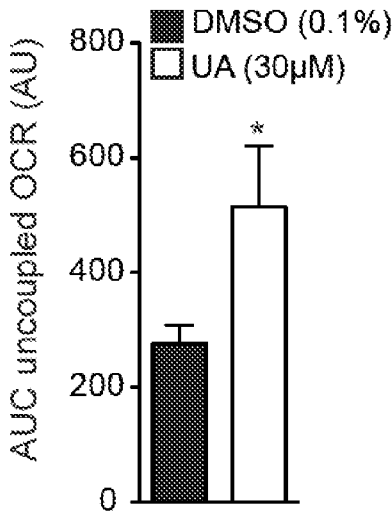


Figure 8

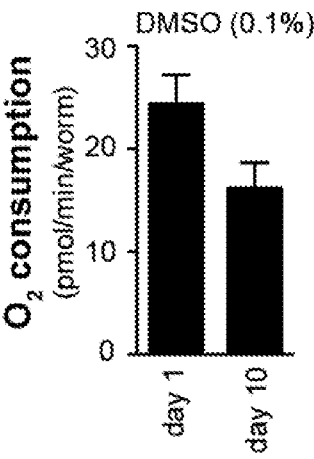
A



B



C



D

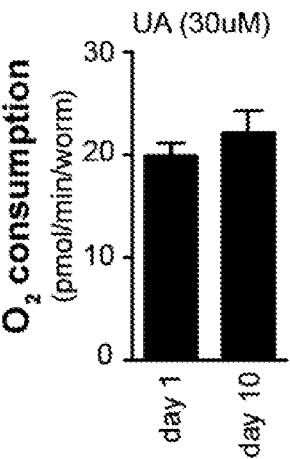
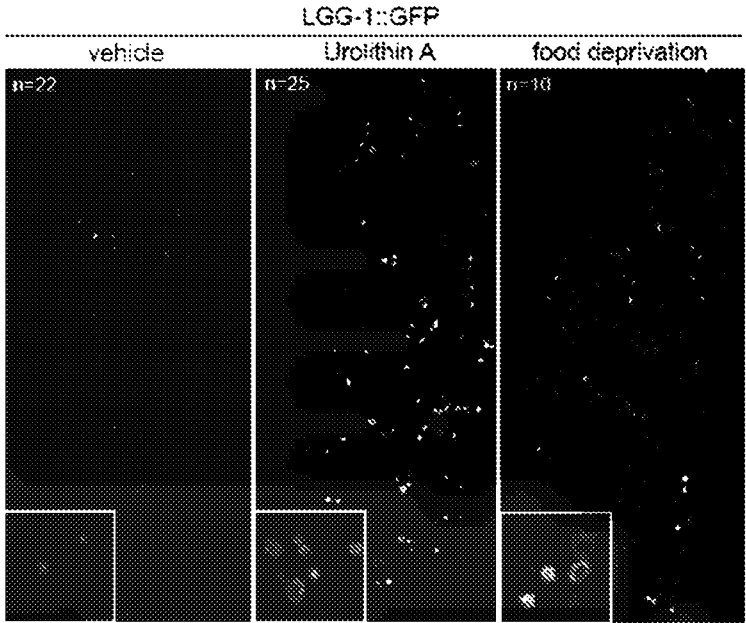


Figure 9

A



B

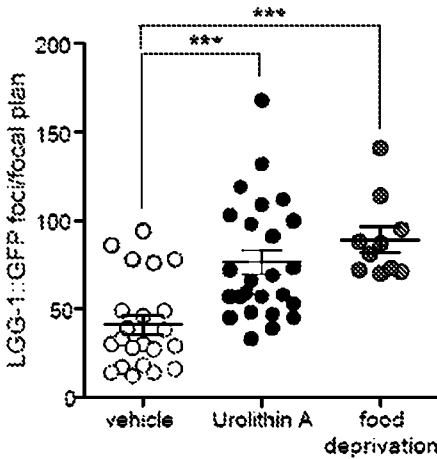
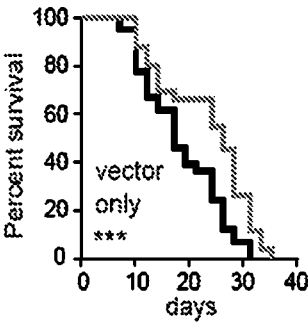
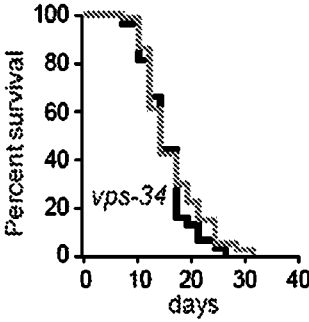


Figure 10

A



B



C

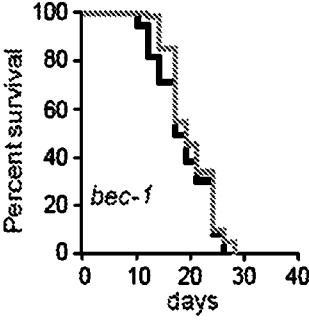
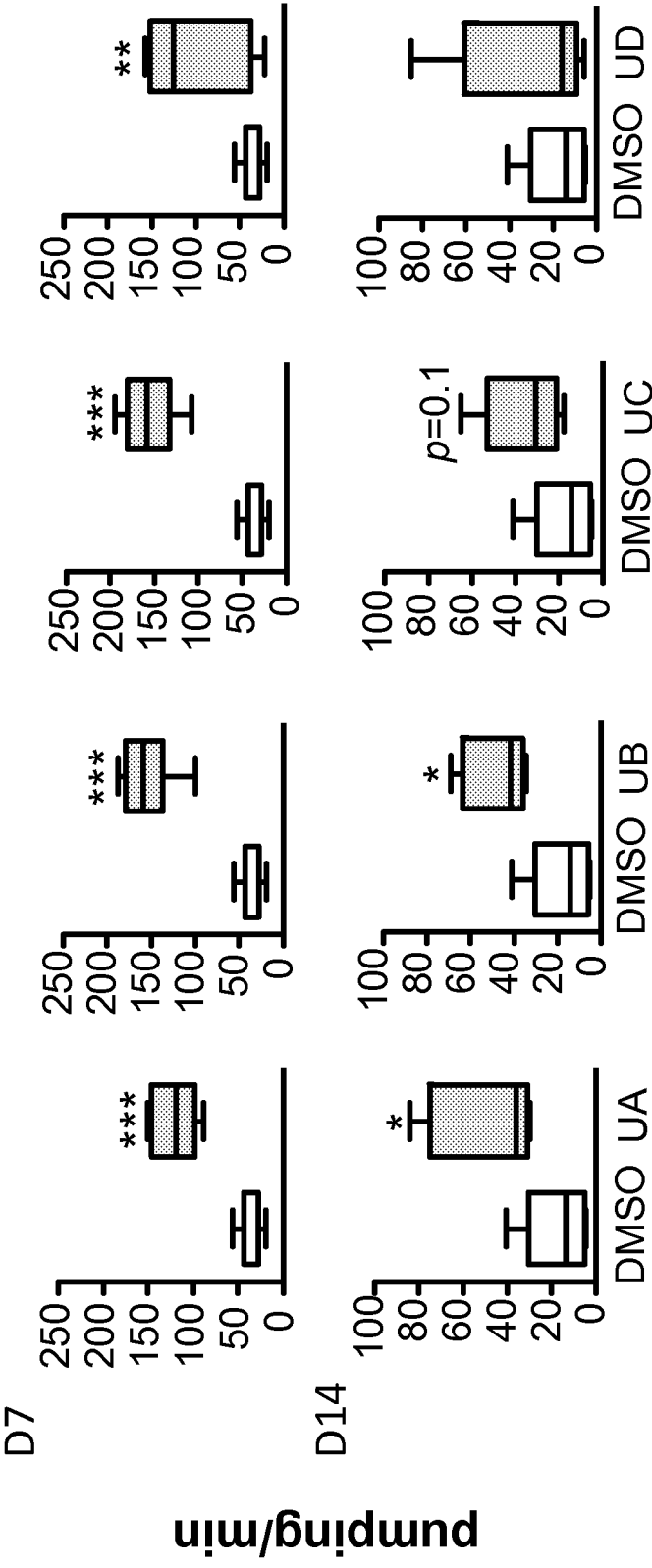


Figure 11



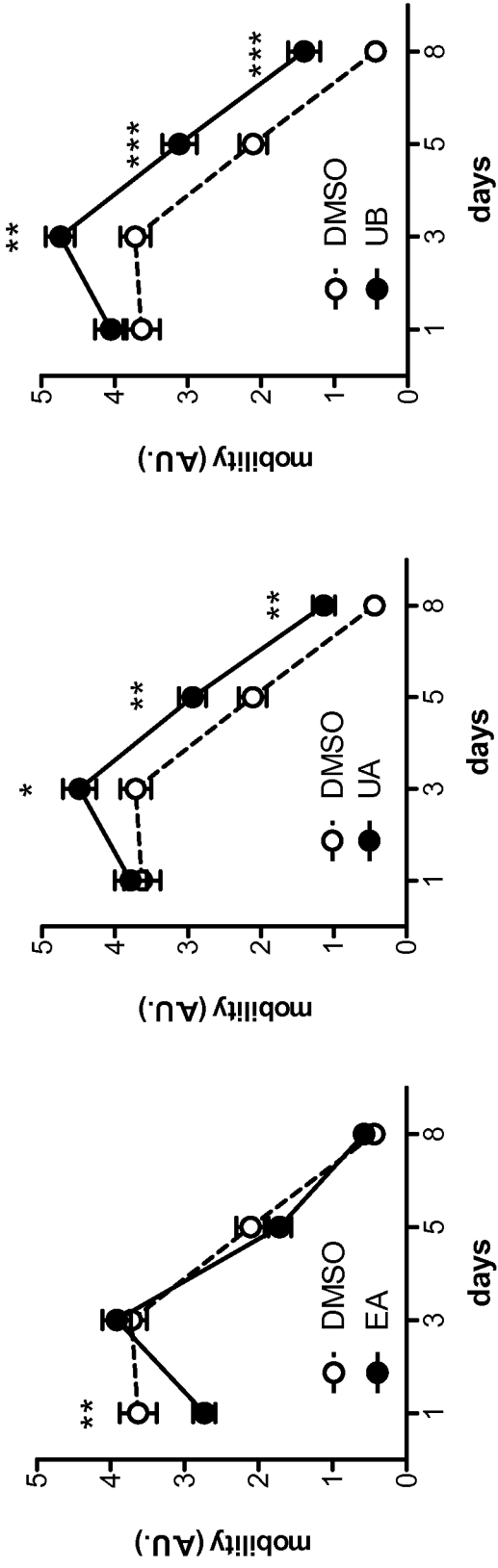


Figure 12

Figure 13

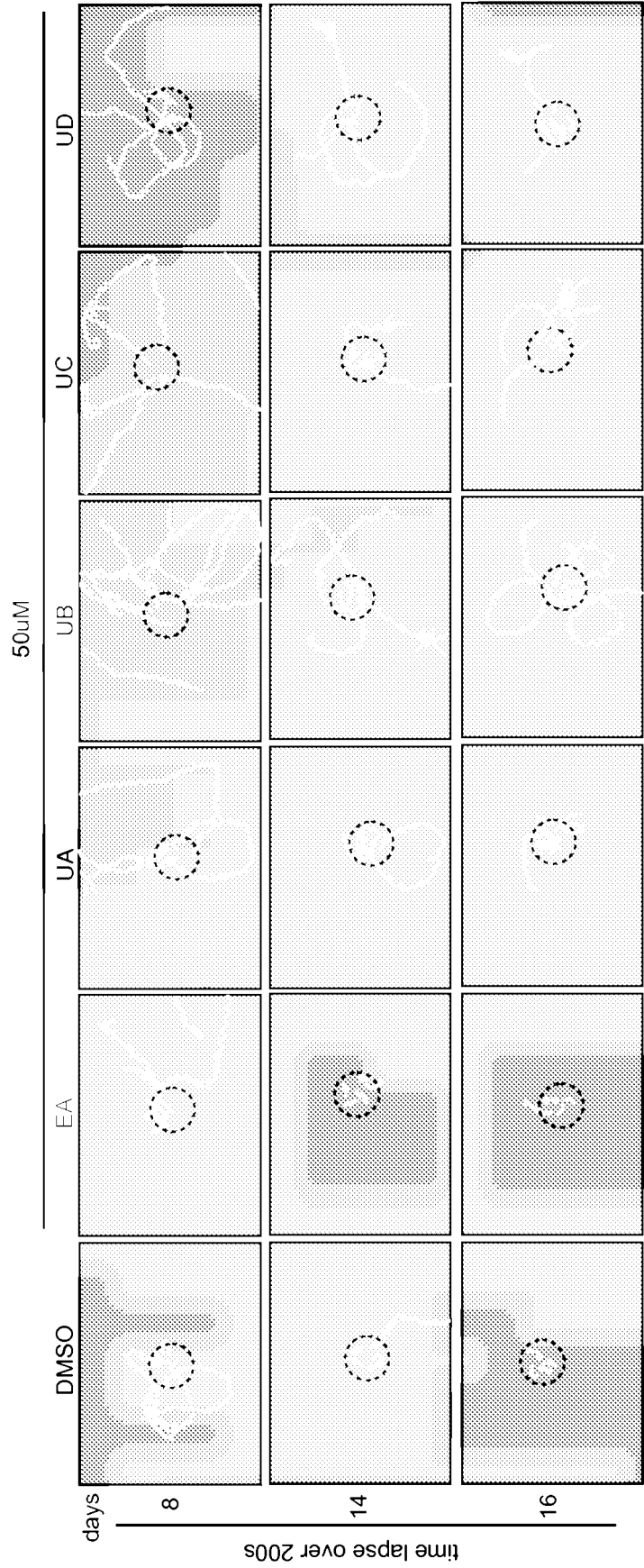


Figure 14

Mode K Cells

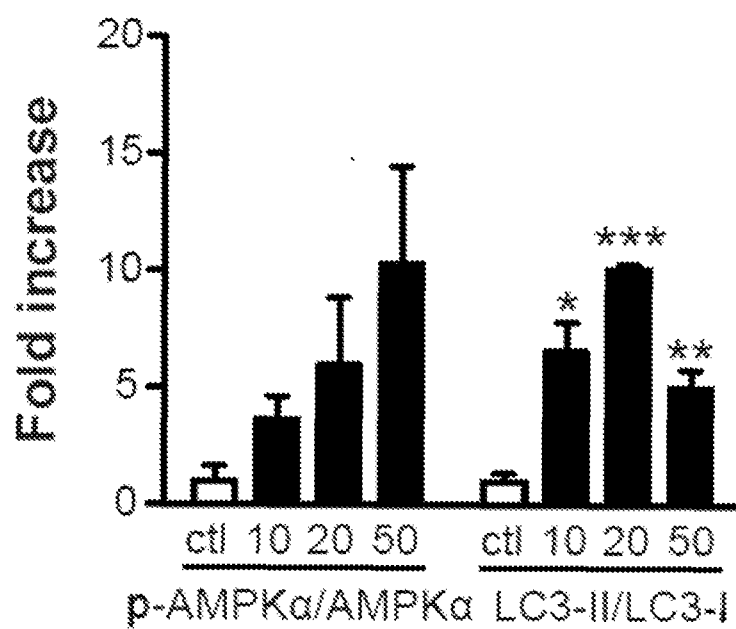
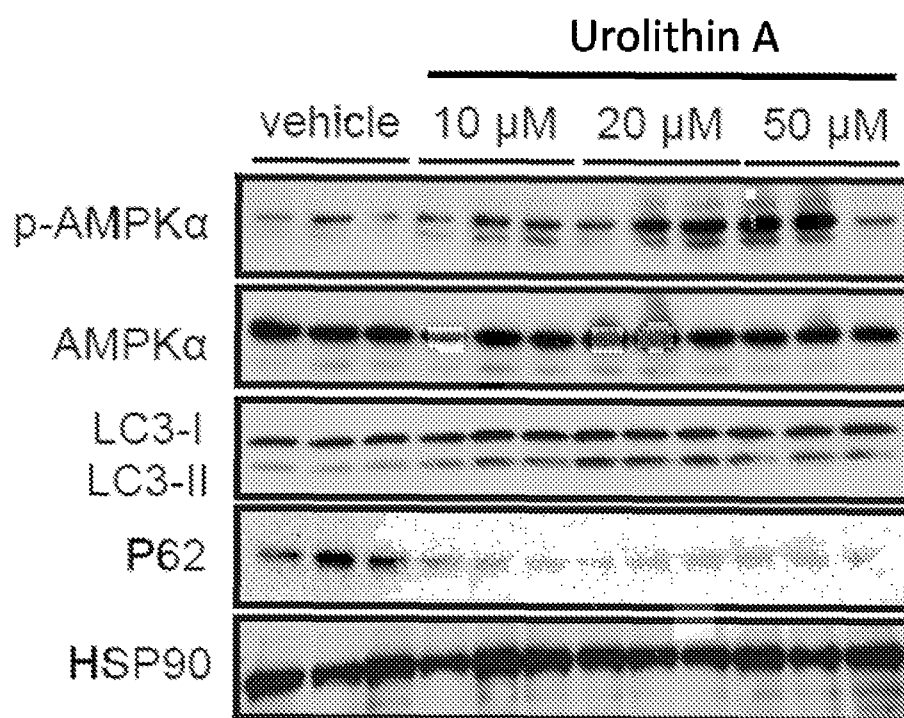


Figure 15

Primary Hepatocytes

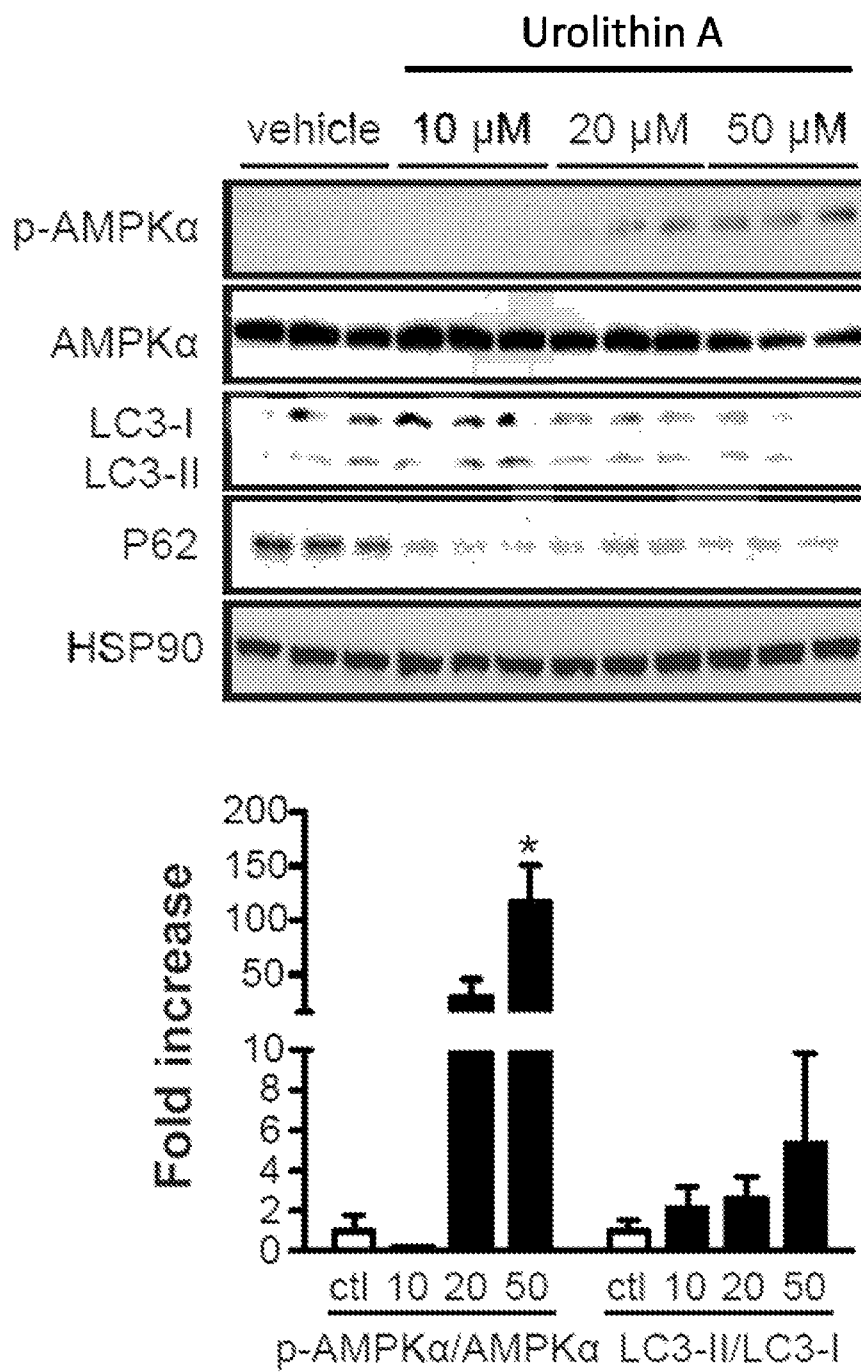


Figure 16

C2C12 Mouse Myoblasts

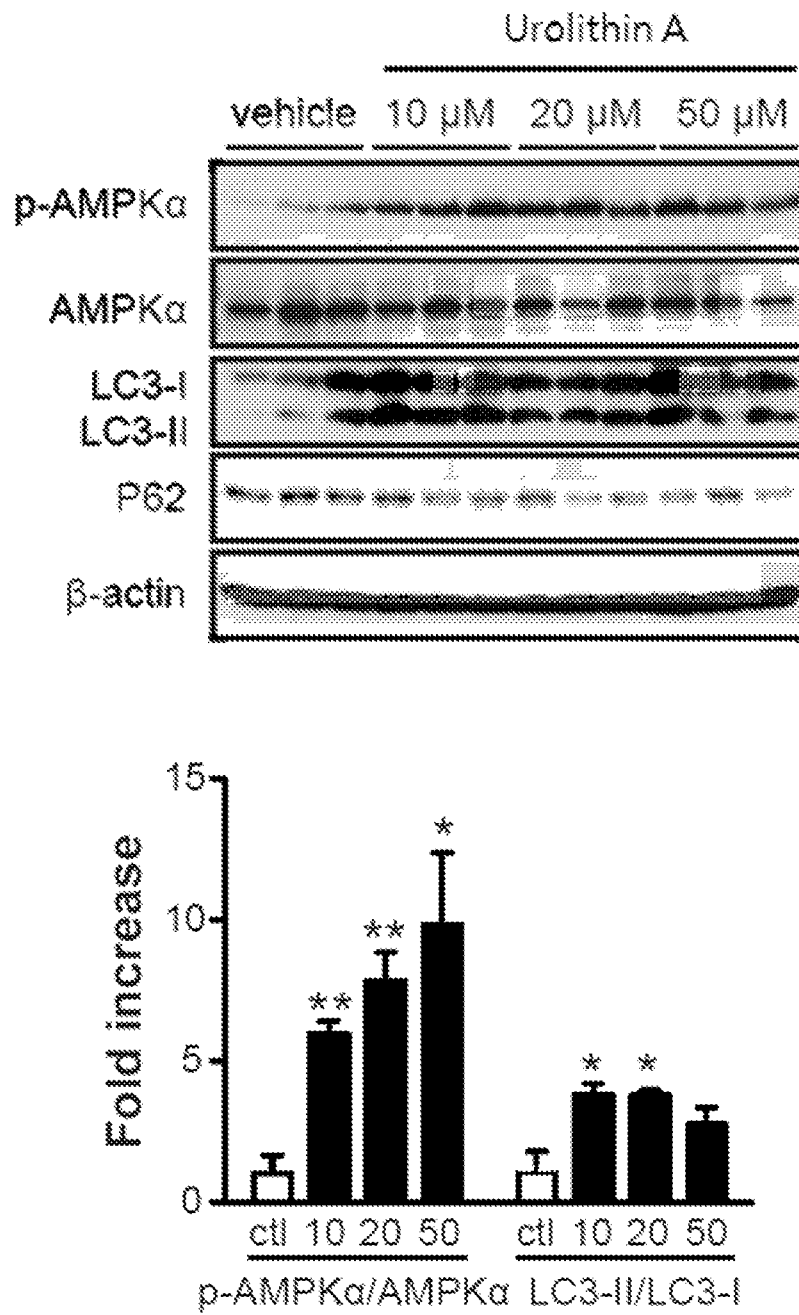


Figure 17

Human Primary Myoblasts

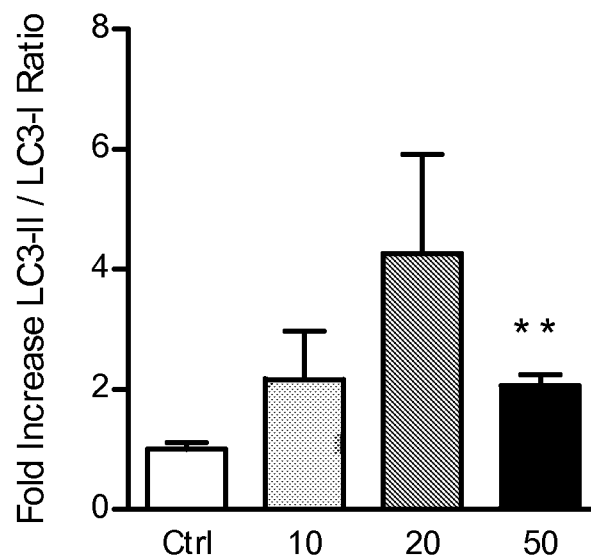
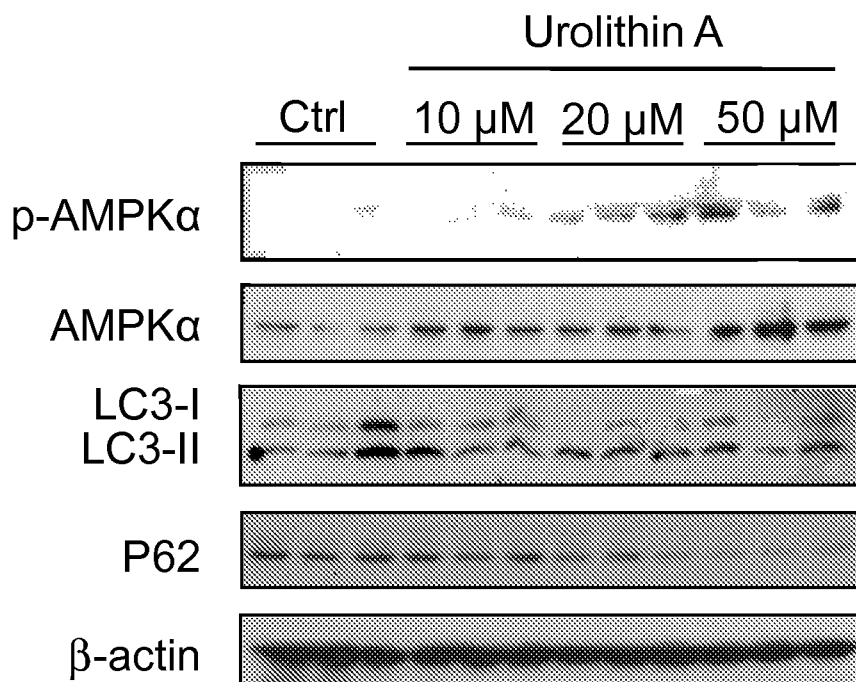
** $p < 0.01$, t-test

Figure 18

Human Primary Aortic Endothelial Cells

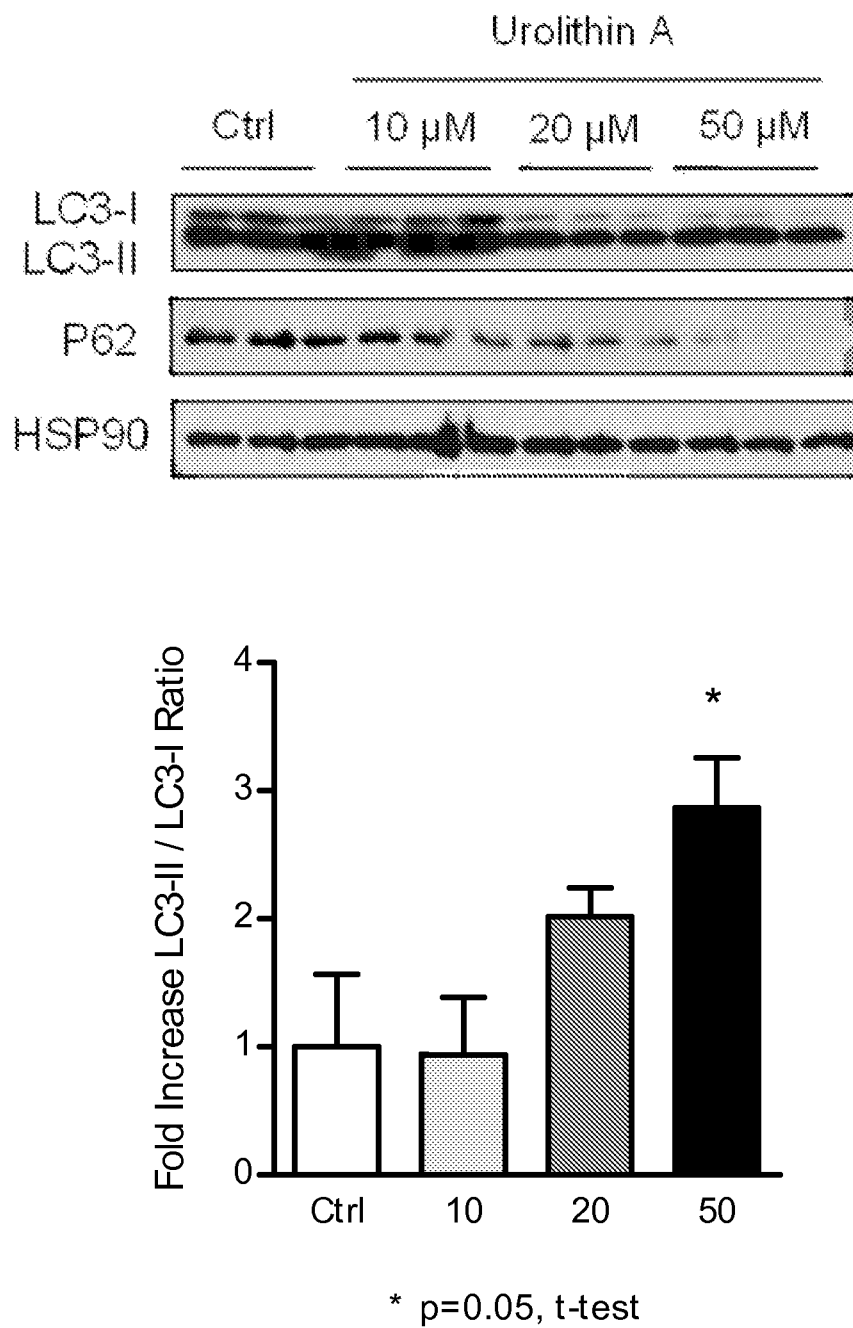


Figure 19

Mouse liver following urolithin A treatment

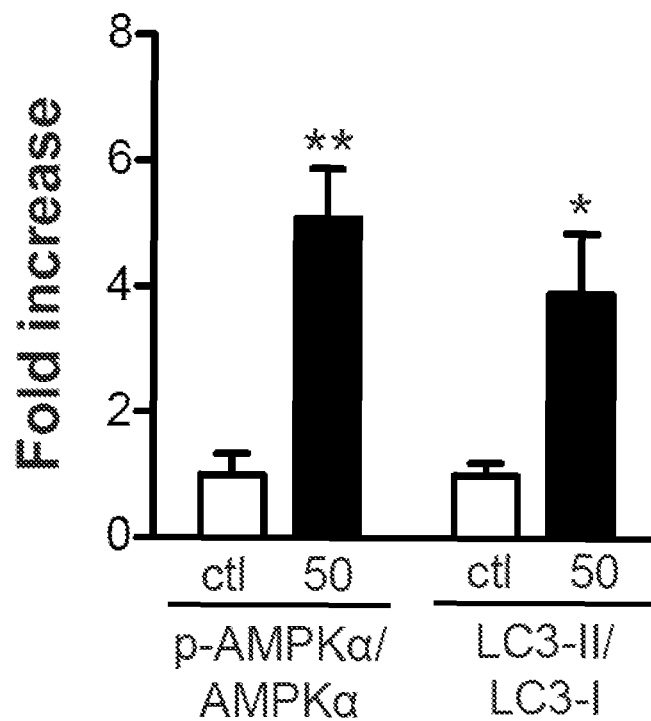
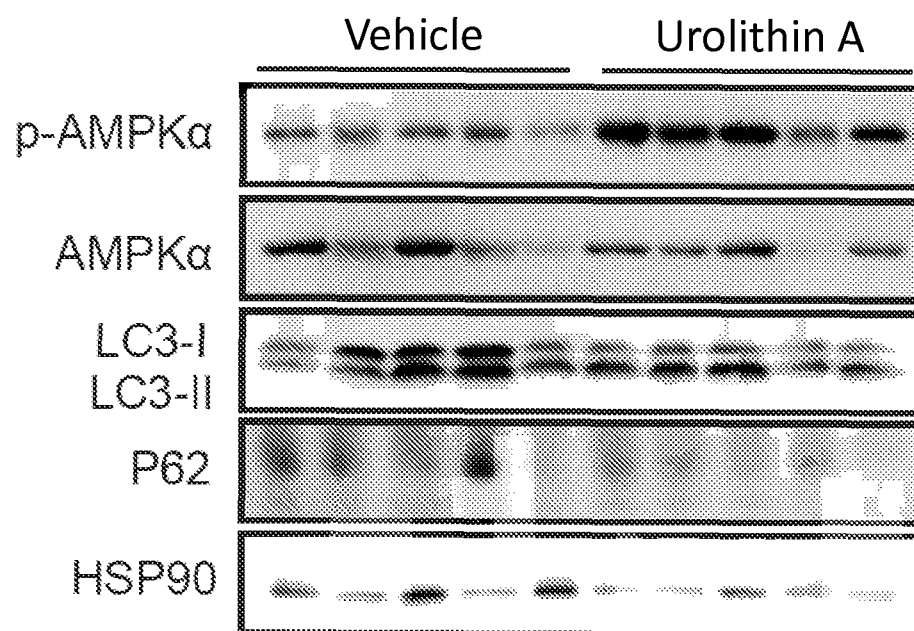


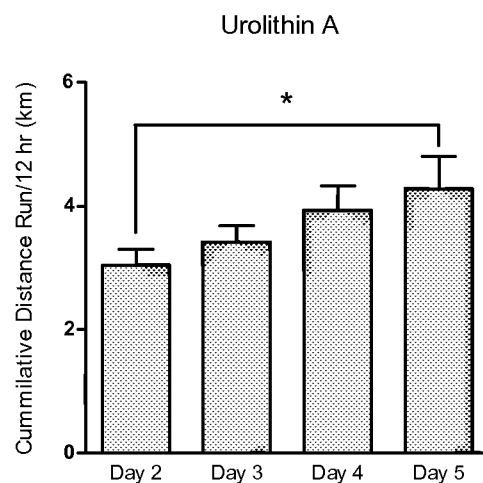
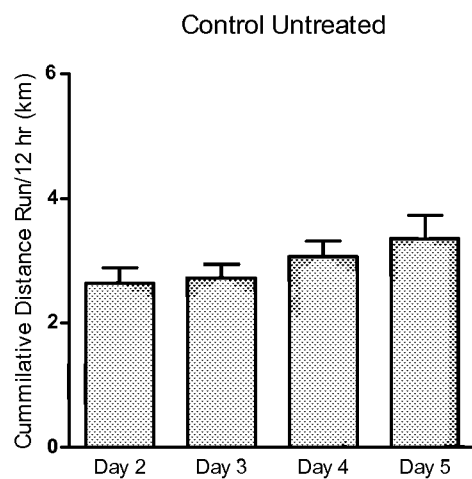
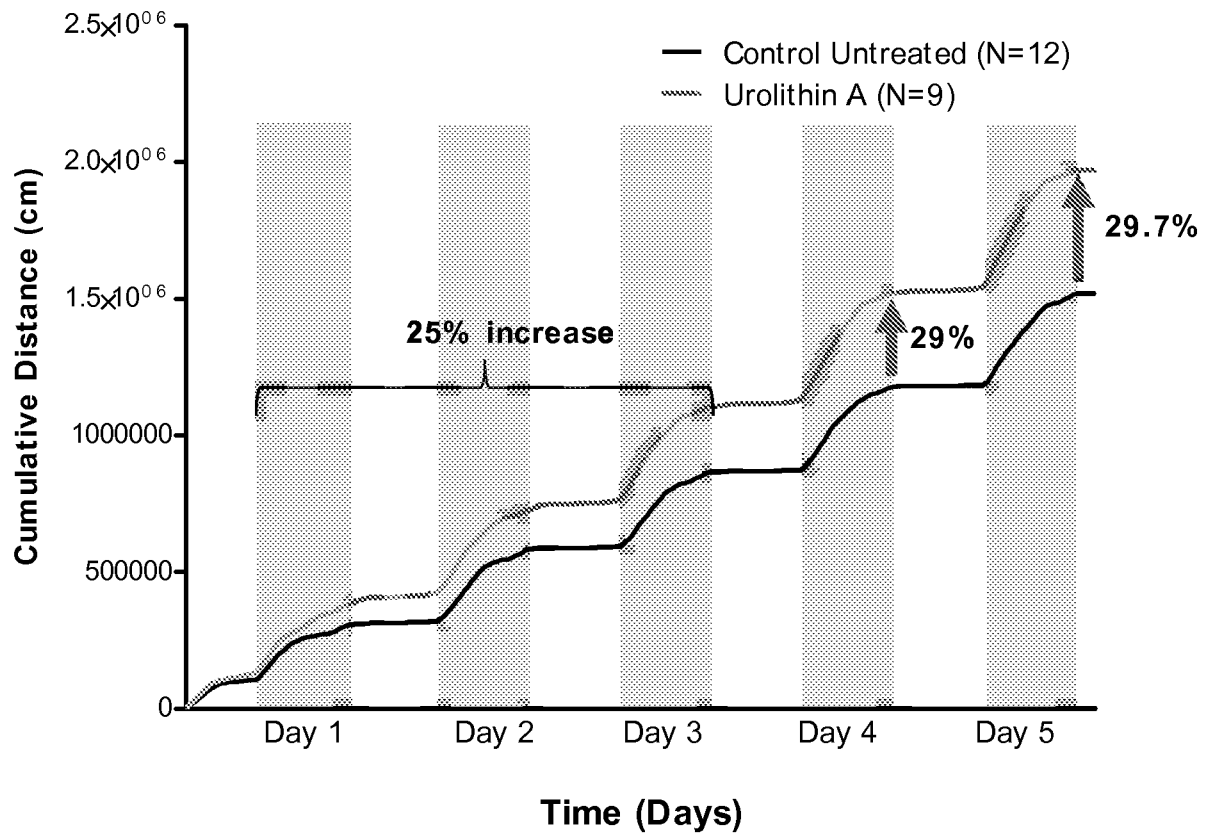
Figure 20Control vs Urolithin A, * $p < 0.05$, 2 way ANOVA* $p < 0.05$, t-test

Figure 21

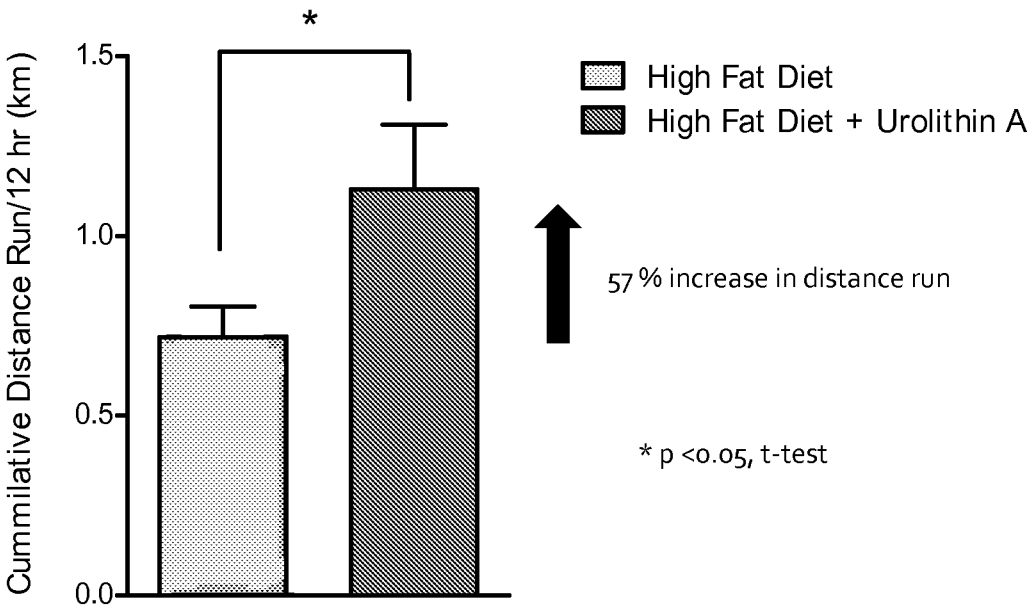


Figure 22

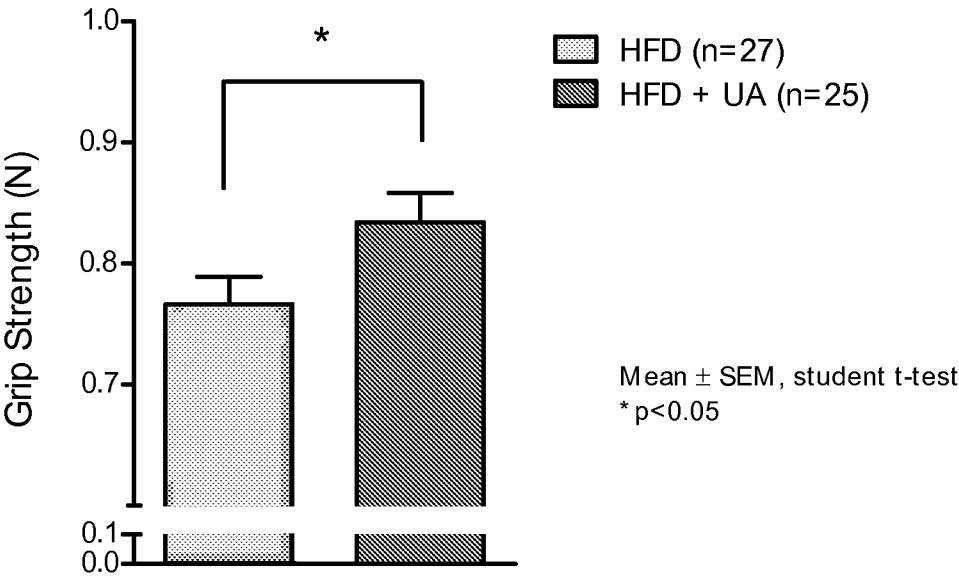


Figure 23

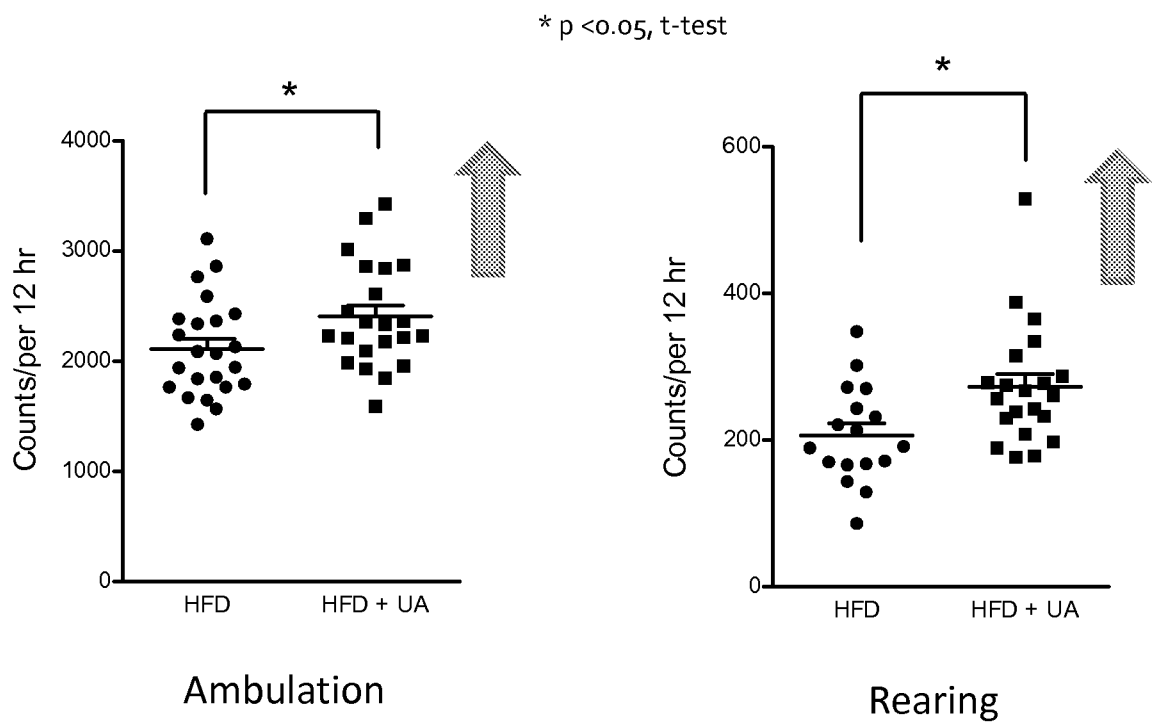
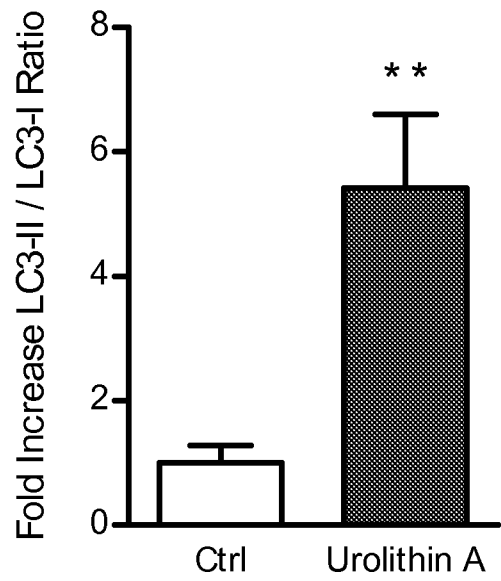
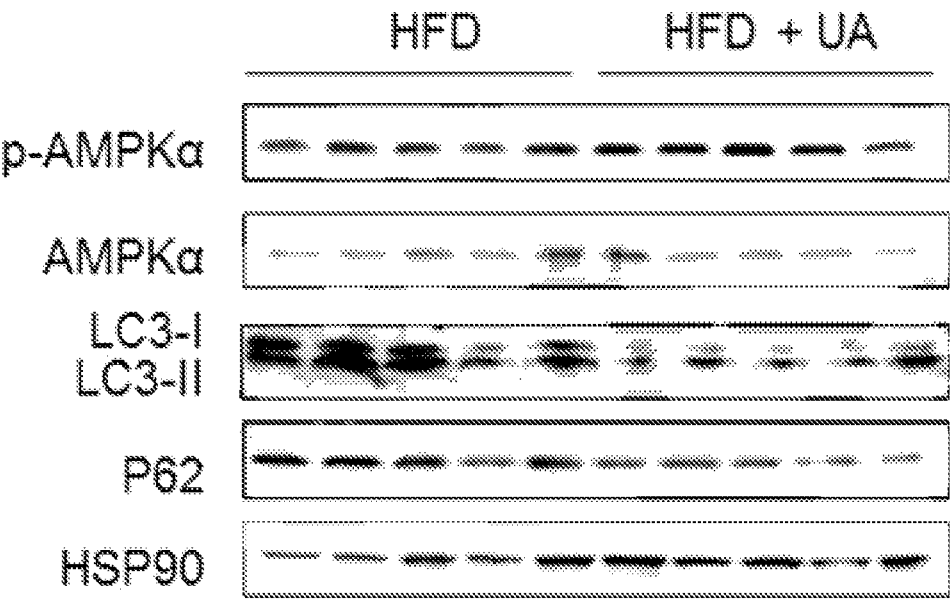


Figure 24

Mouse Gastrocnemius Muscle



** p<0.01, t-test

Figure 25

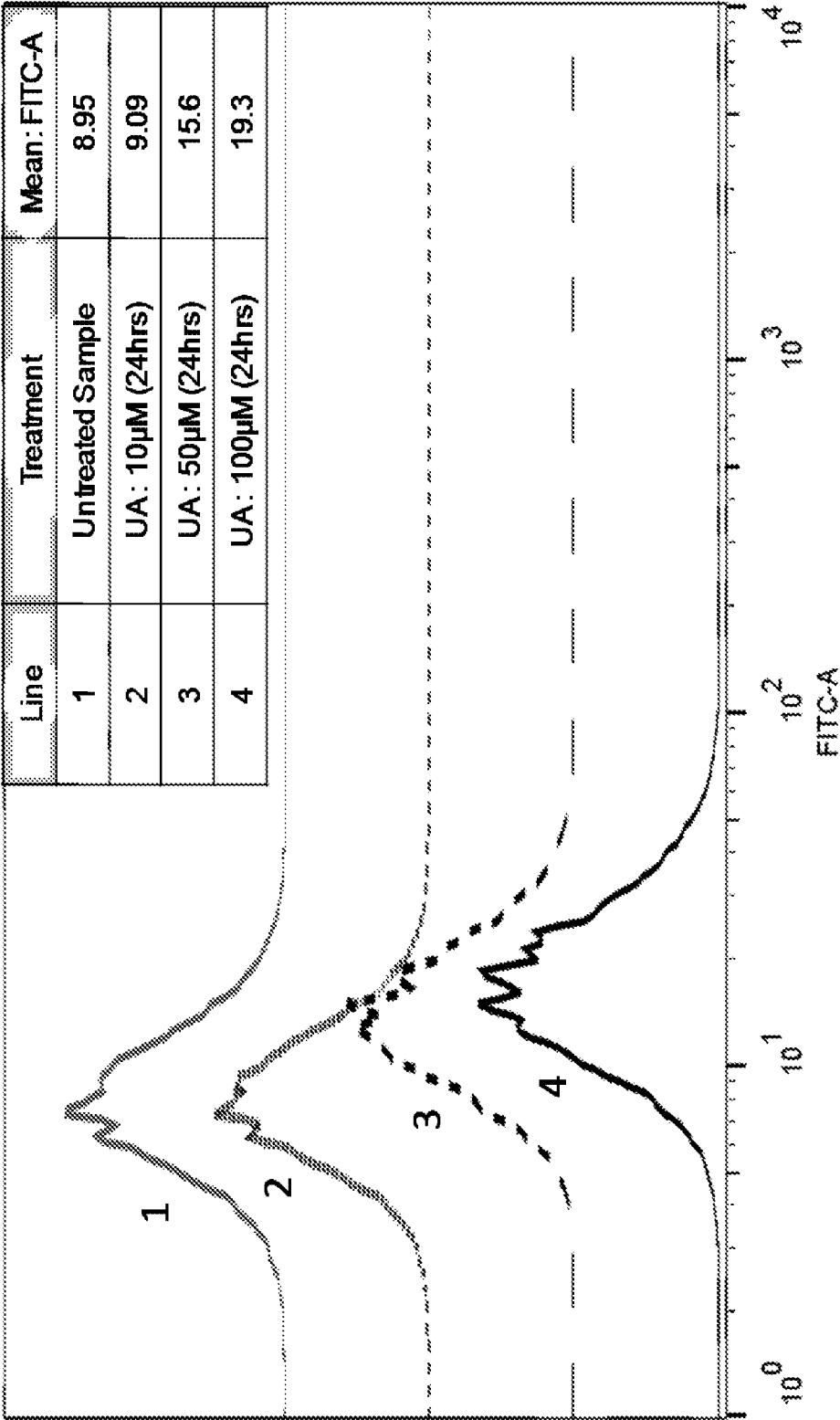
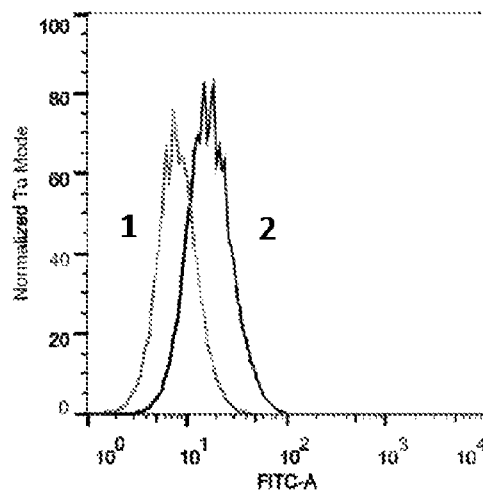
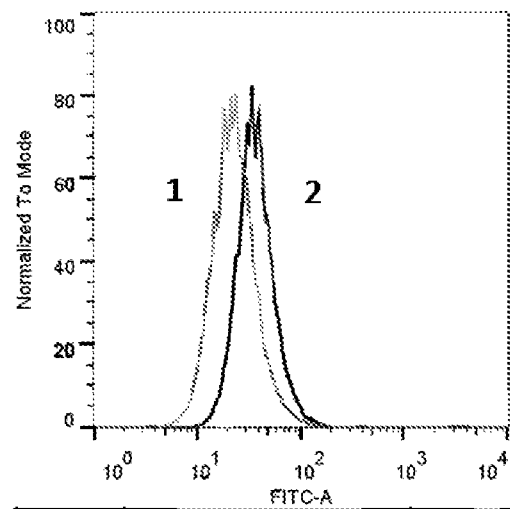


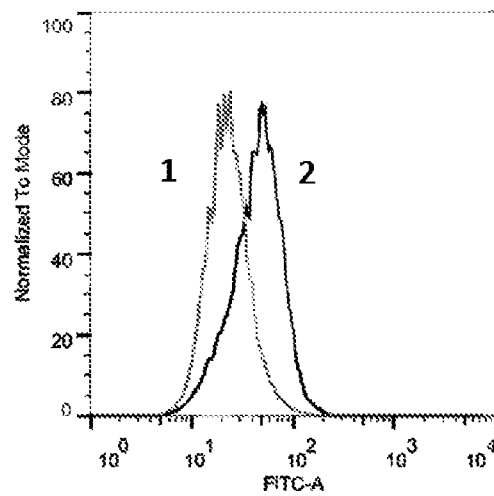
Figure 26



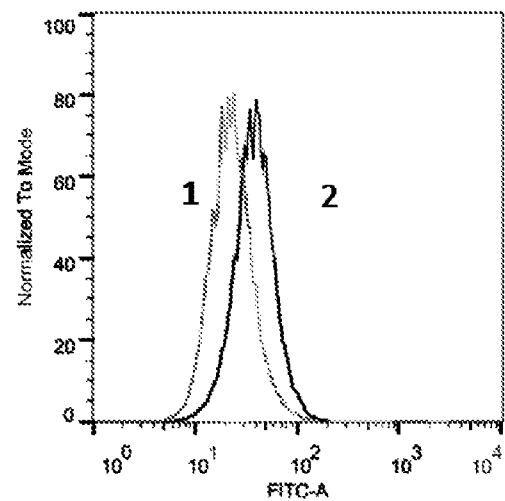
Line	C2C12 Cell Treatment	FITC-A
1	Untreated Control	8.95
2	UA : 100μM (24hrs)	19.3



Line	C2C12 Cell Treatment	FITC-A
1	Untreated Control	25.9
2	UB : 100μM (24hrs)	40.1



Line	C2C12 Cell Treatment	FITC-A
1	Untreated Control	25.9
2	UC : 100μM (24hrs)	49.7



Line	C2C12 Cell Treatment	FITC-A
1	Untreated Control	25.9
2	UD : 100μM (24hrs)	41.6

Figure 27

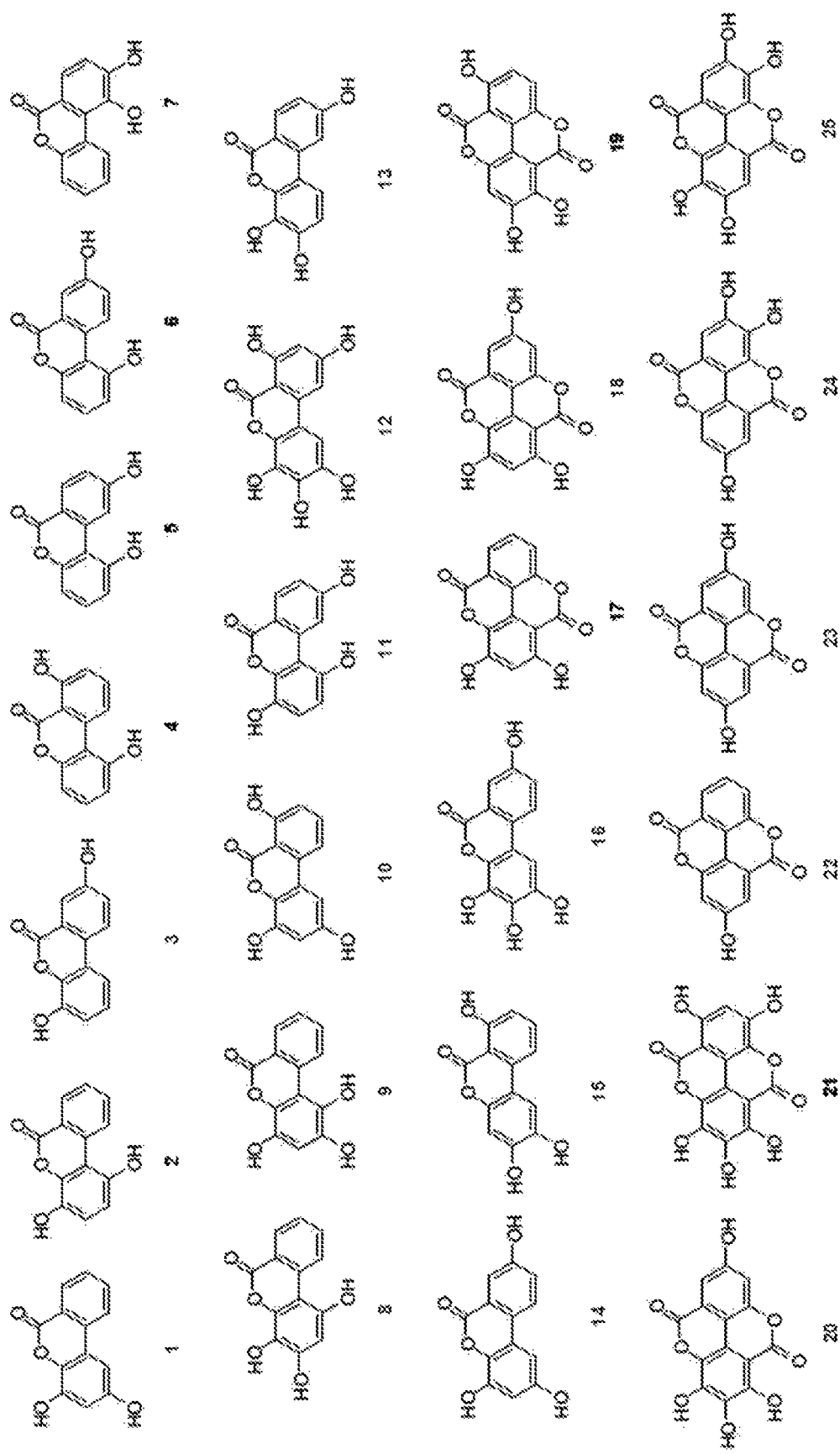
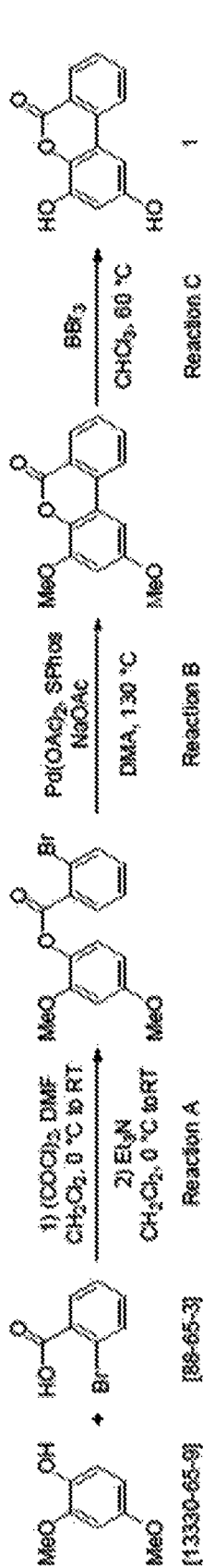
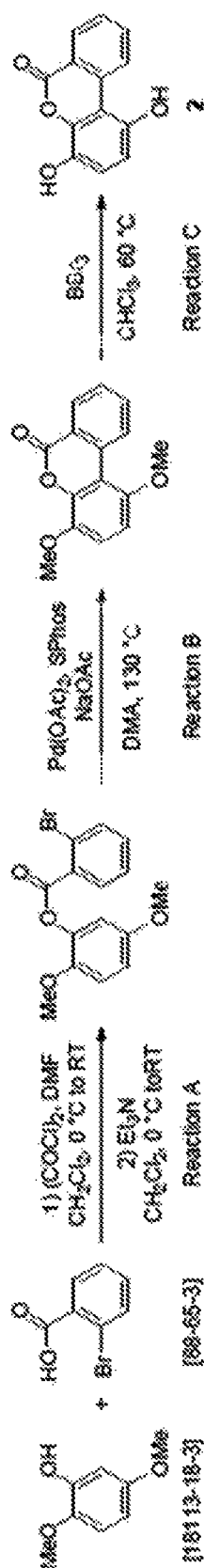


Figure 28

Compound 1



Compound 2



Compound 3

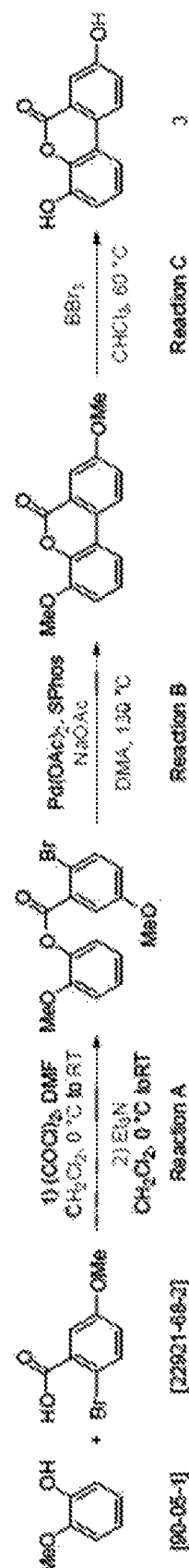
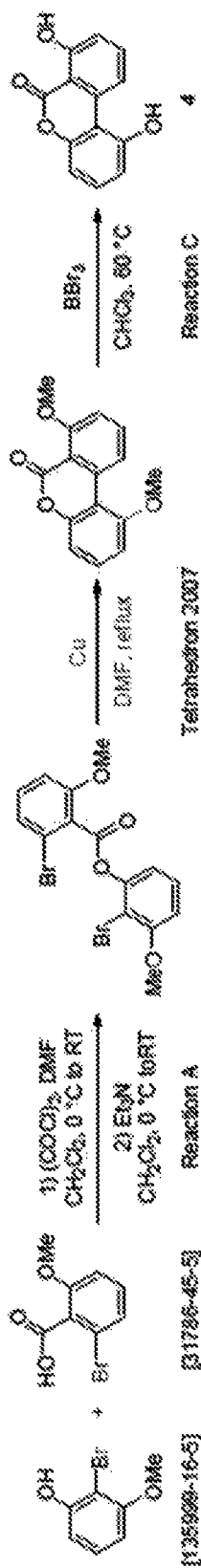


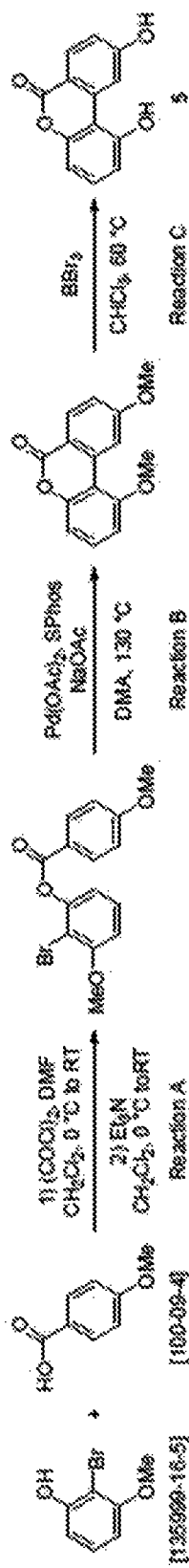
Figure 28 (cont.)

Compound 4



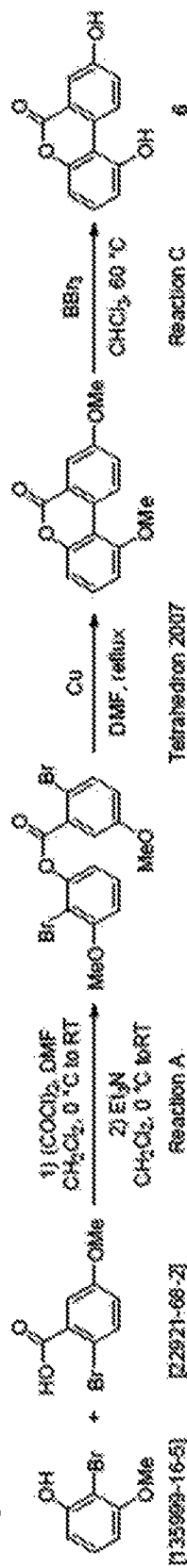
References: Reactions A, C and Tetrahedron 2007, 63, 10454-10465

Compound 5



References: Reactions A, B and C

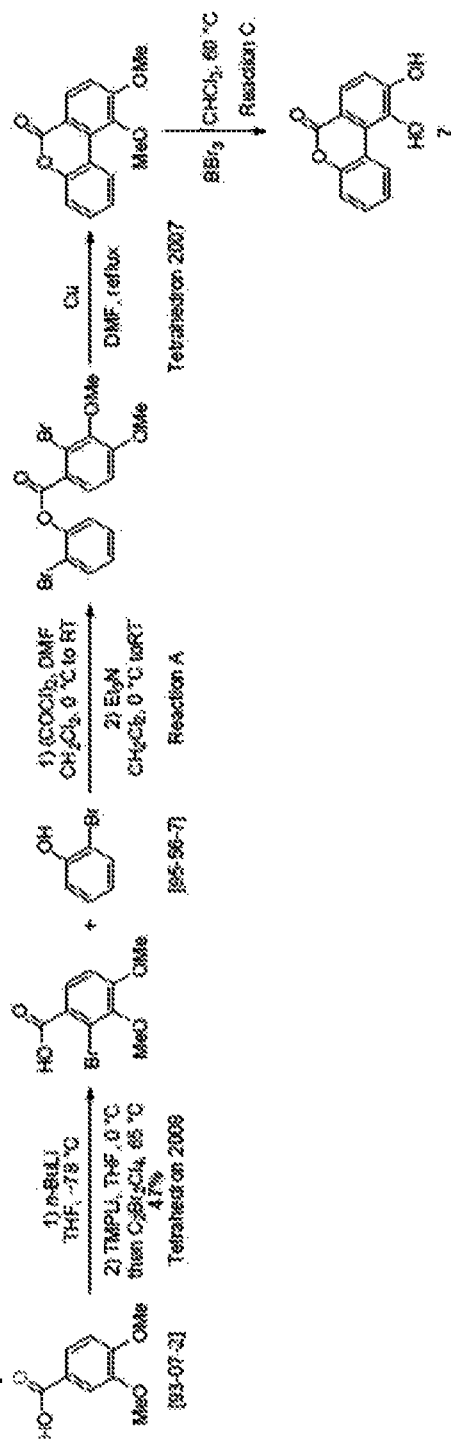
Compound 6



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

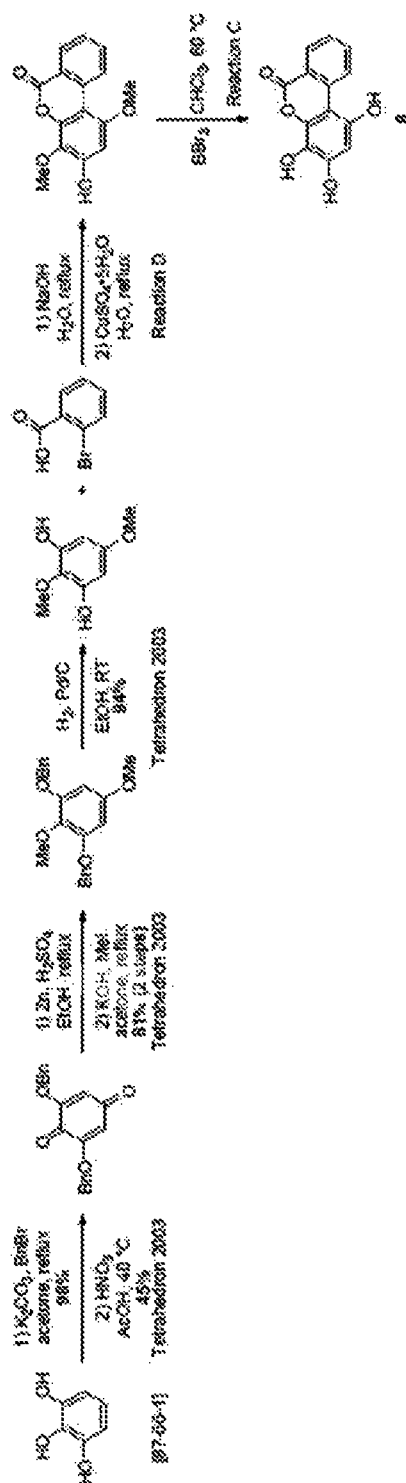
Figure 28 (cont.)

Compound 7



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

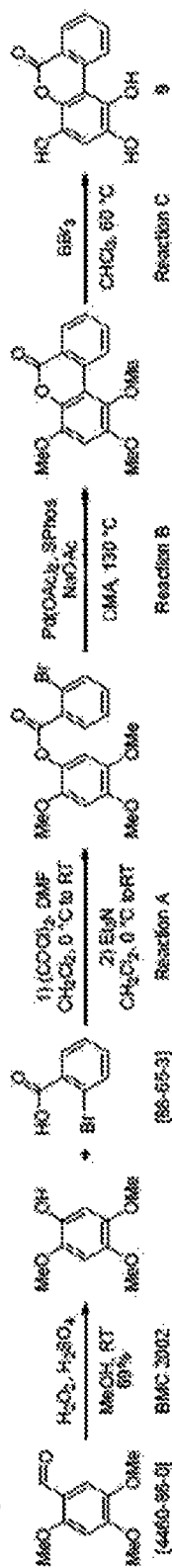
Compound 8



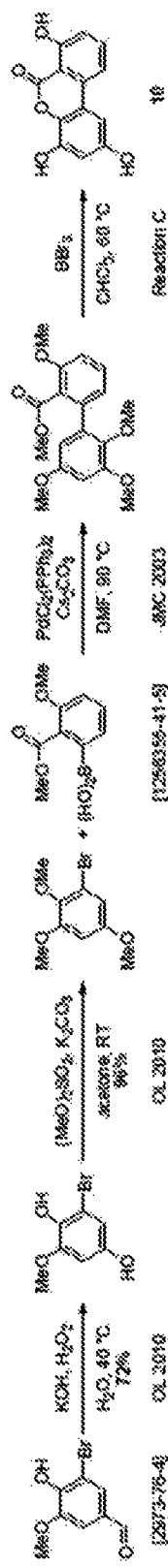
References: Reactions C, D and Tetrahydron 2003, 59, 9872-9887

Figure 28 (cont.)

Compound 9



Compound 10



Compound 11

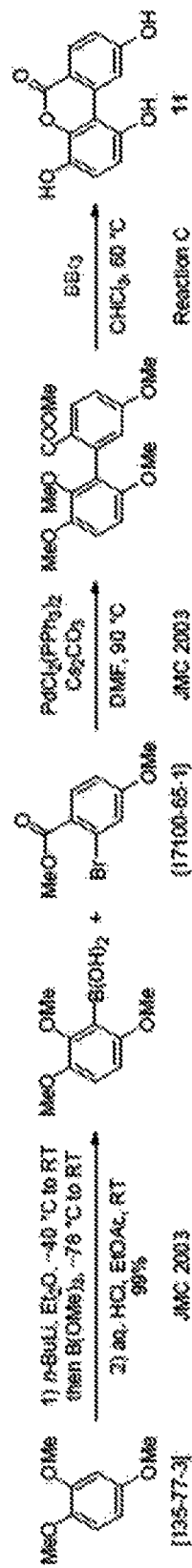
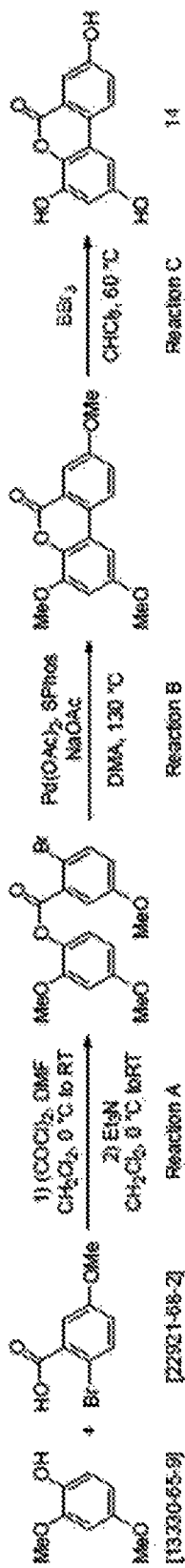
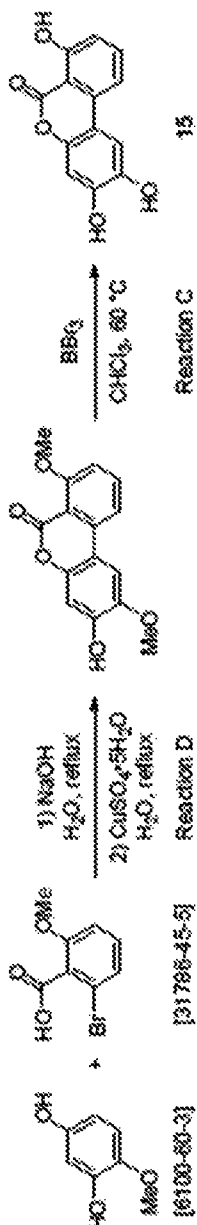


Figure 28 (cont.)

Compound 14



Compound 15



Compound 16

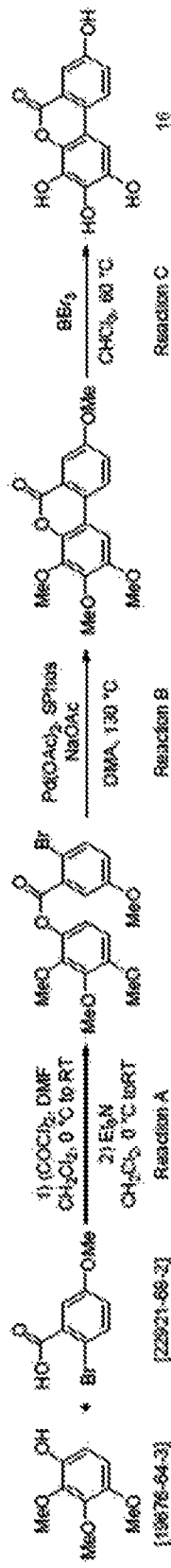
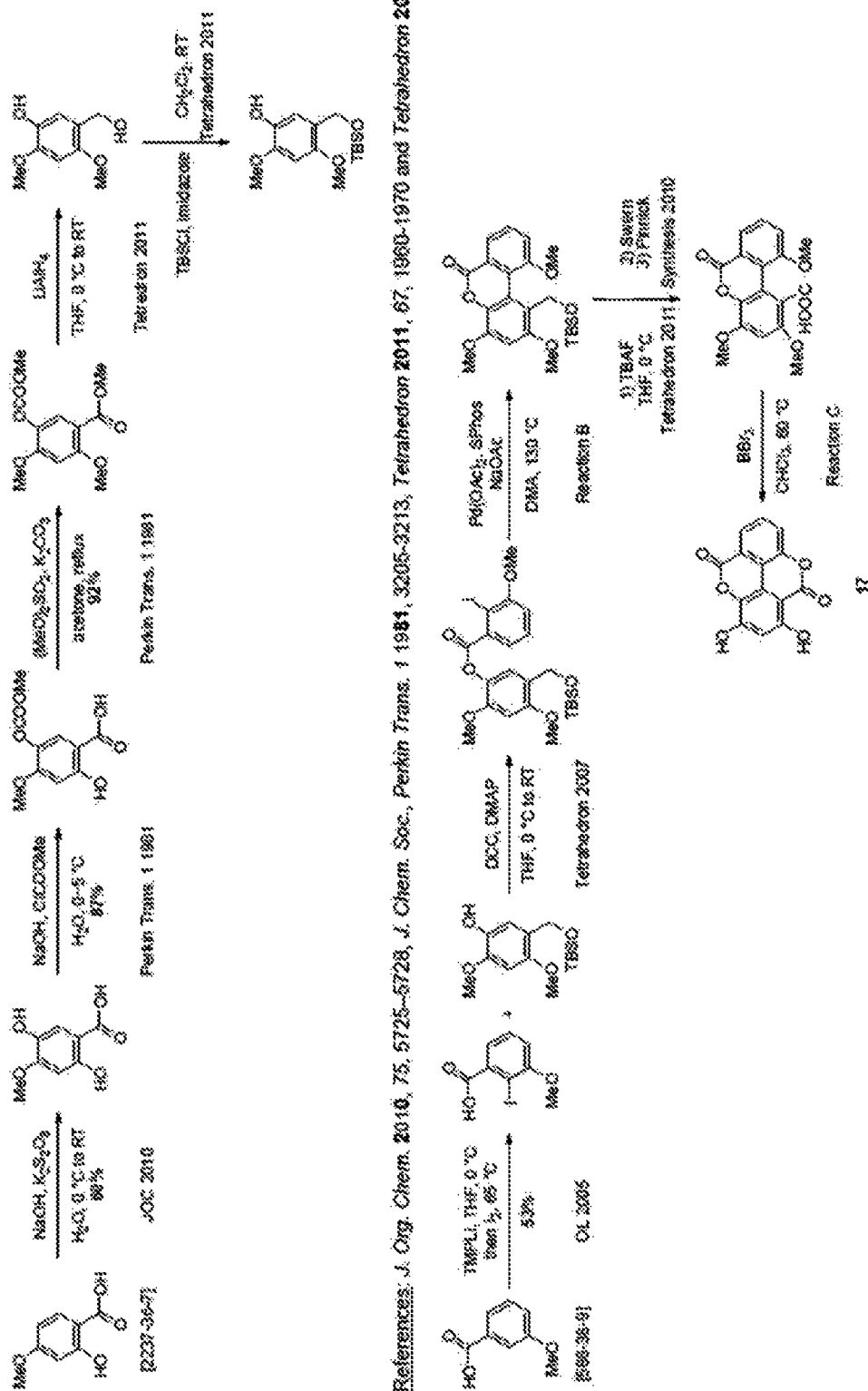


Figure 28 (cont.)

Compounds 17 & 18

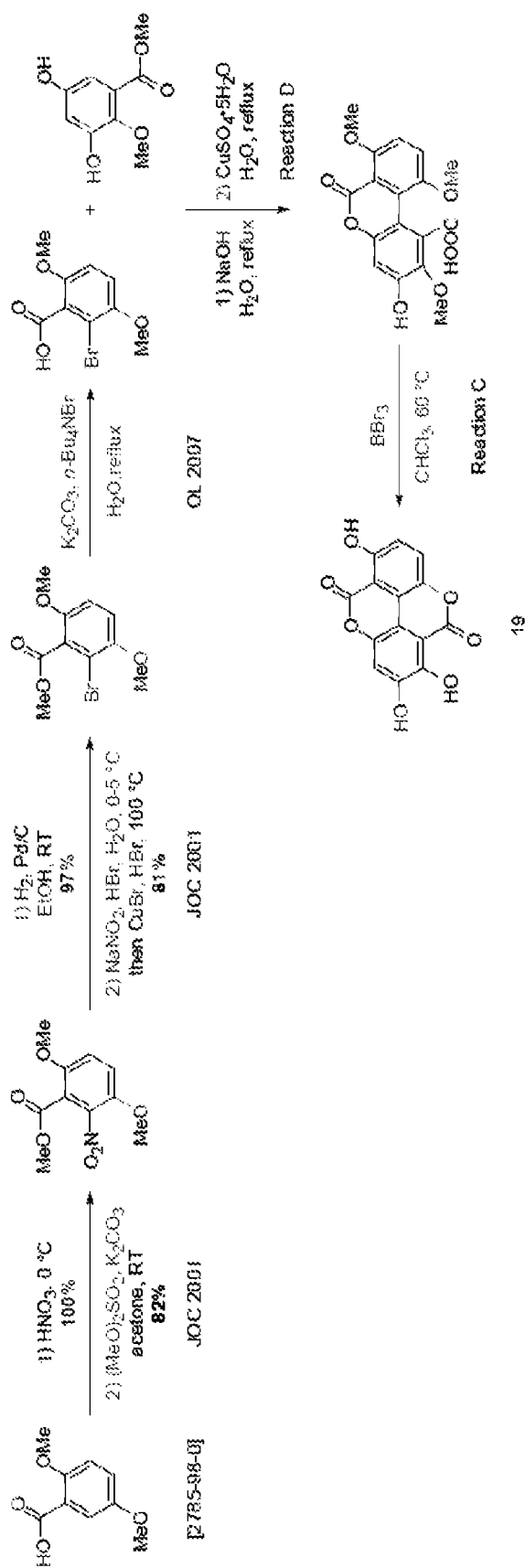


Compounds 17 & 18 (cont.)



Figure 28 (cont.)

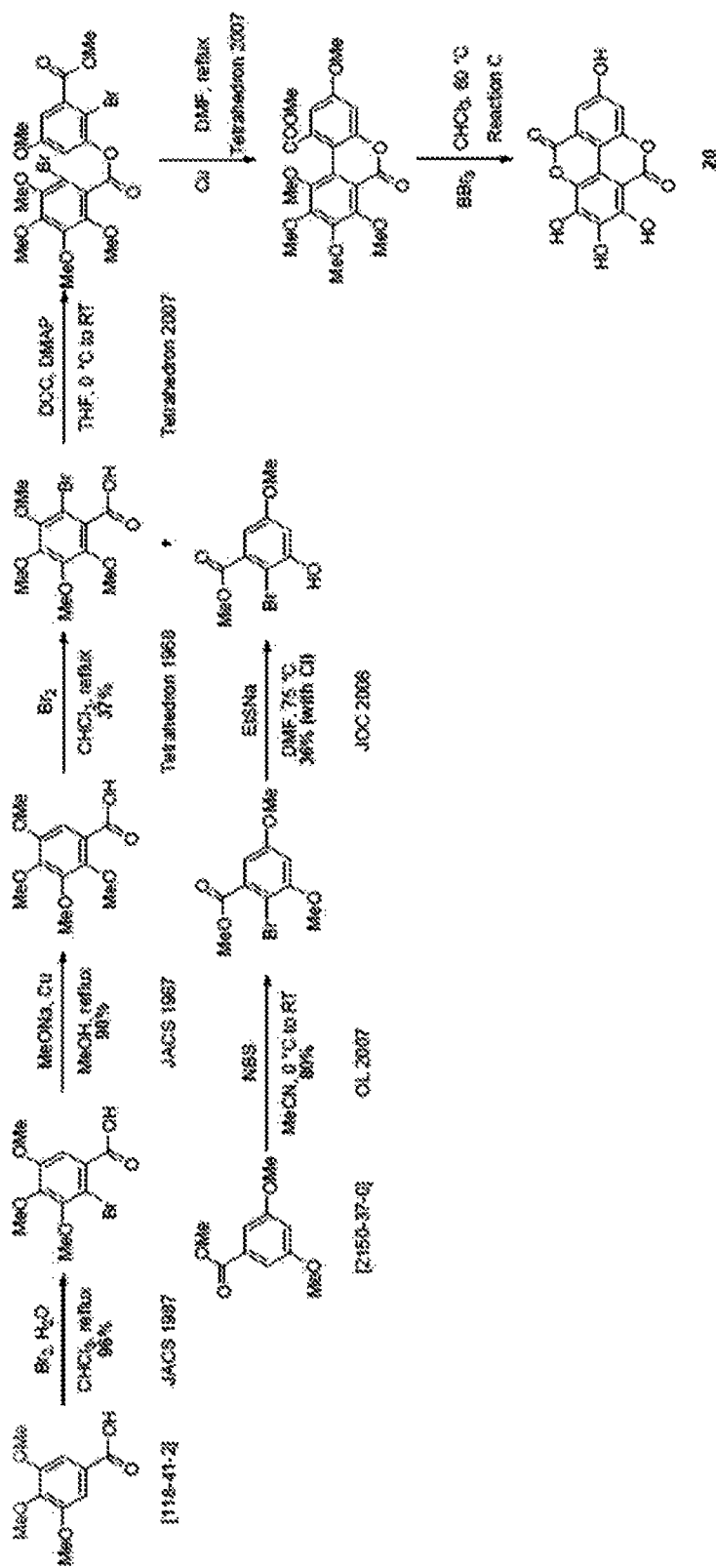
Compound 19



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

Figure 28 (cont.)

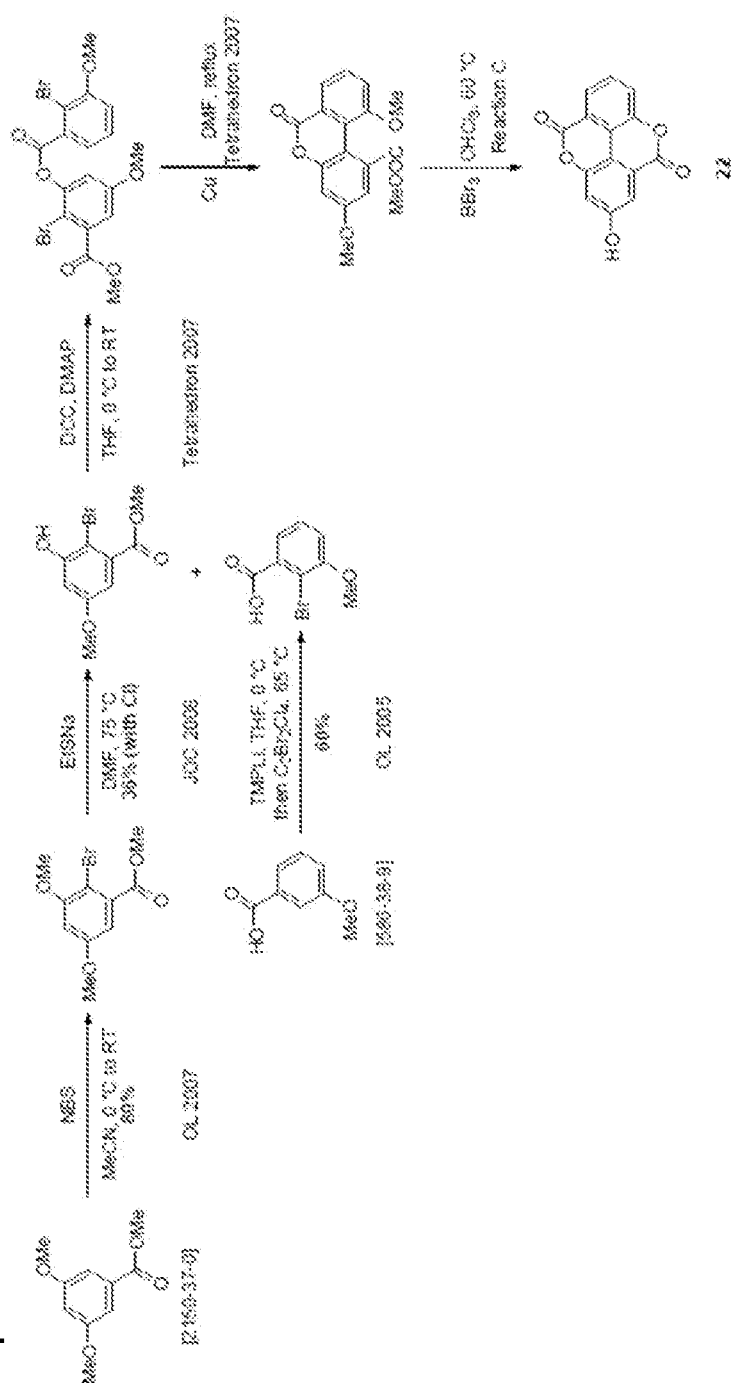
Compound 20



References: Reaction C, *J. Am. Chem. Soc.* **1987**, *109*, 5448-5452; *Tetrahedron* **1968**, *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.)

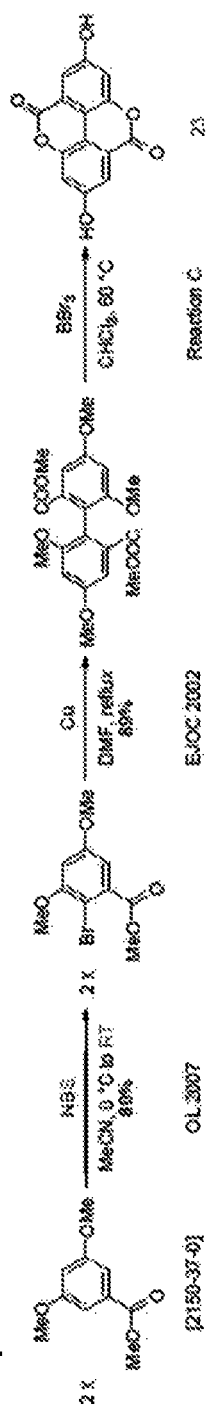
Compound 22



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

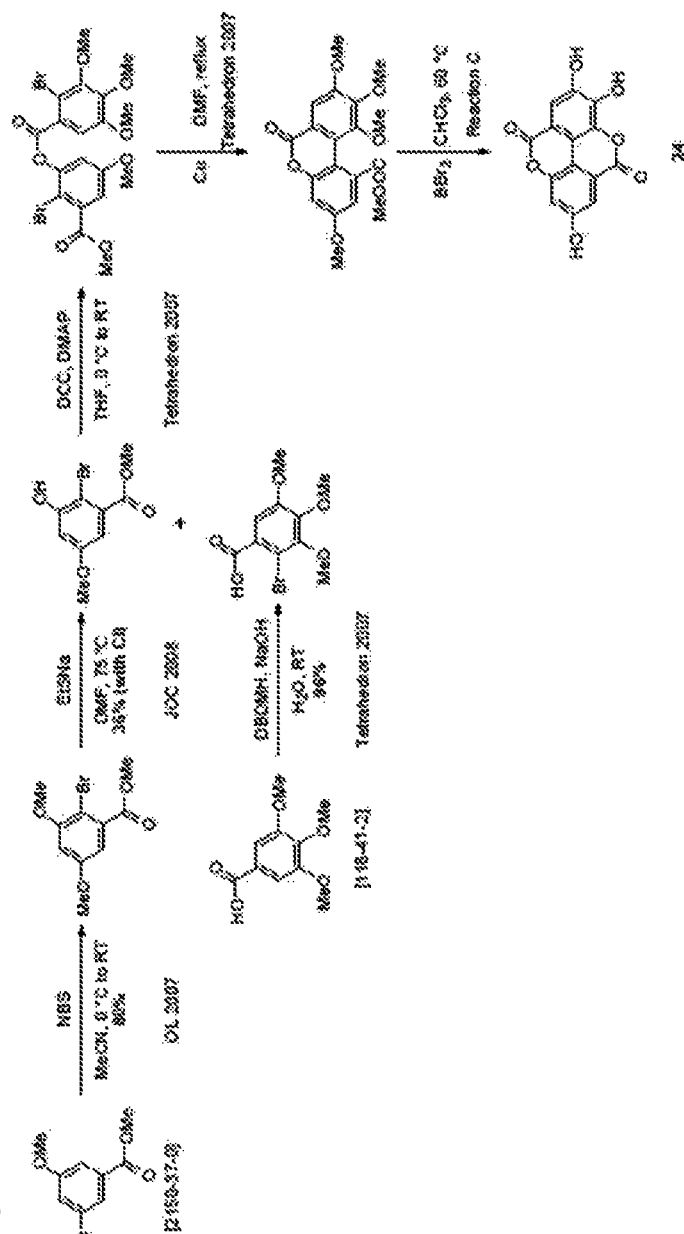
Figure 28 (cont.)

Compound 23



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

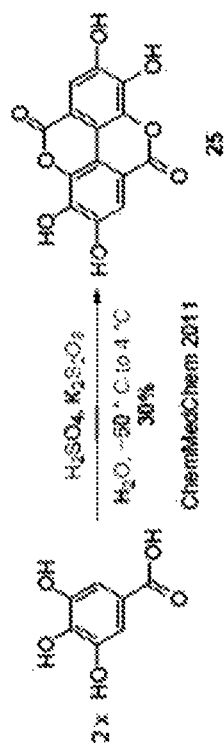
Compound 24



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