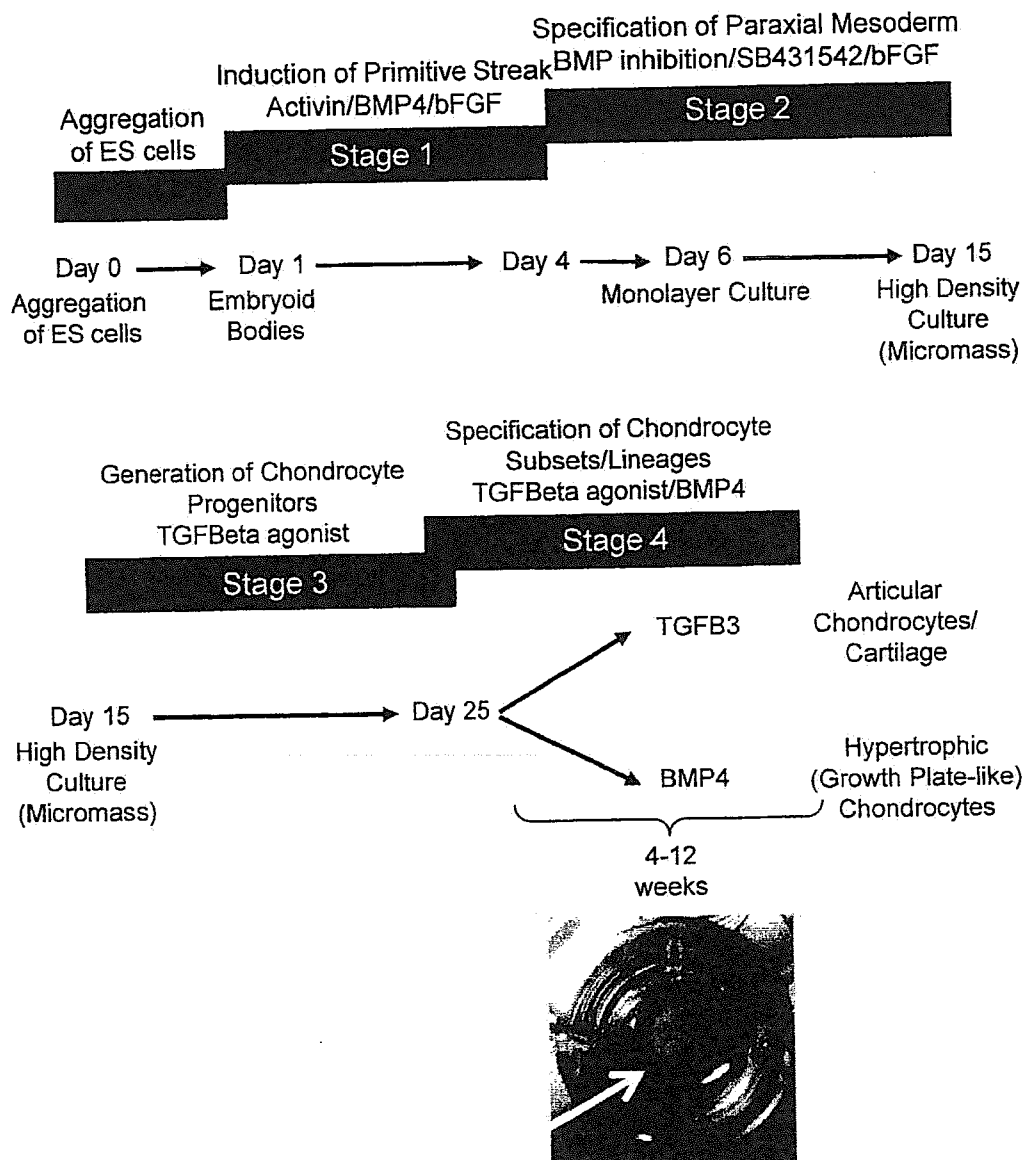


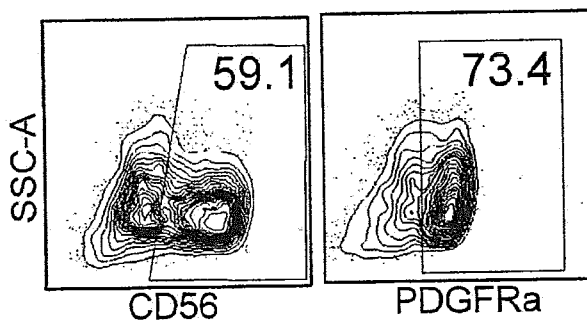
**Figure 1**

**A**



**B**

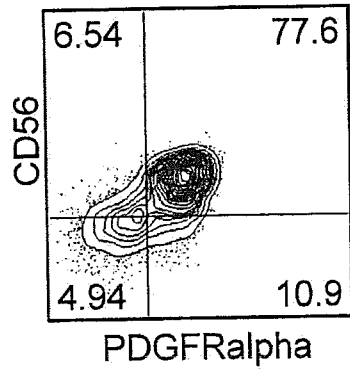
**T4 Profiles**



**Figure 1 (continued)**

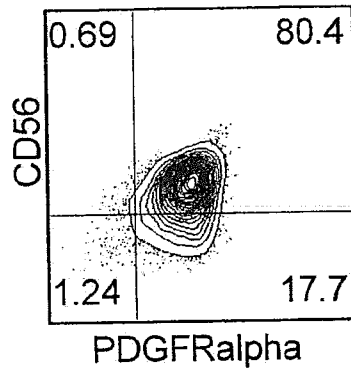
**C**

Day 4 primitive streak for hESCs



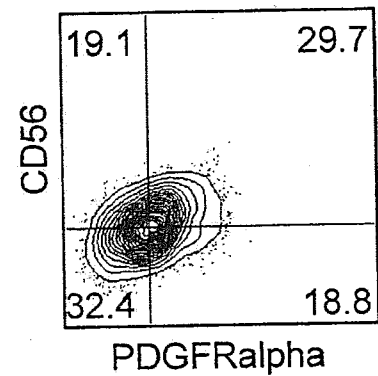
**D**

Day 3 primitive streak for hiPSCs



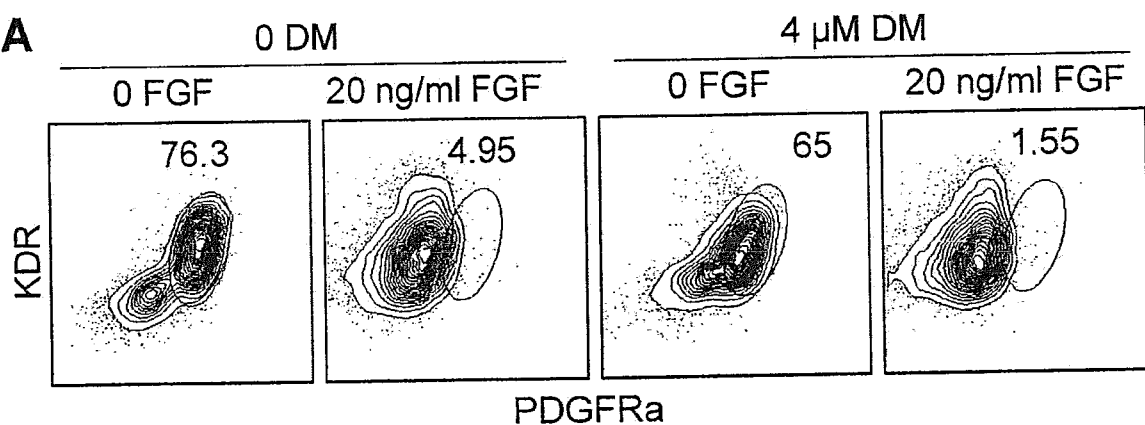
**E**

Without CHIR99061

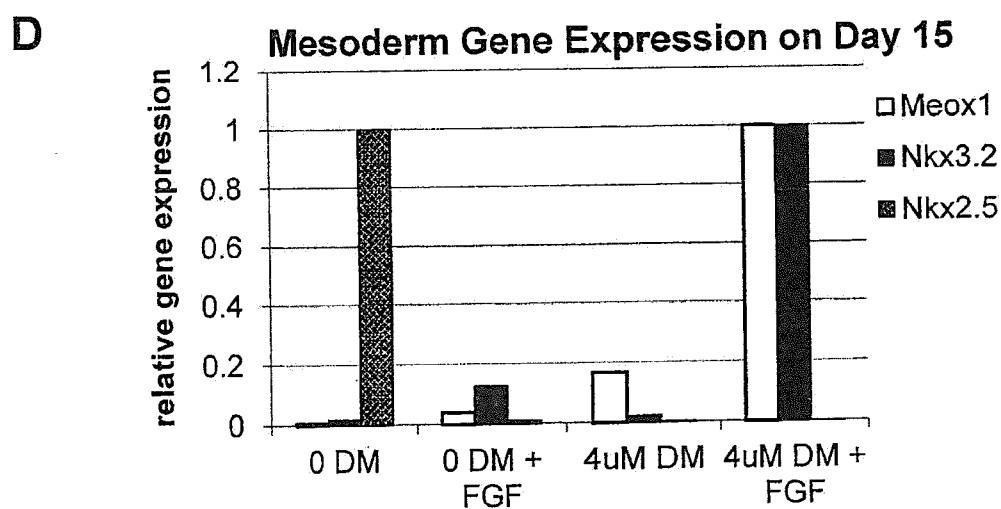
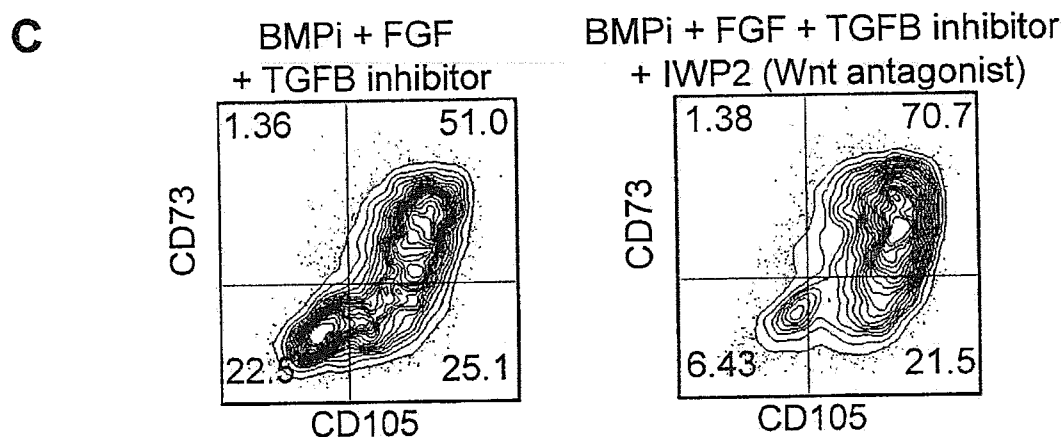
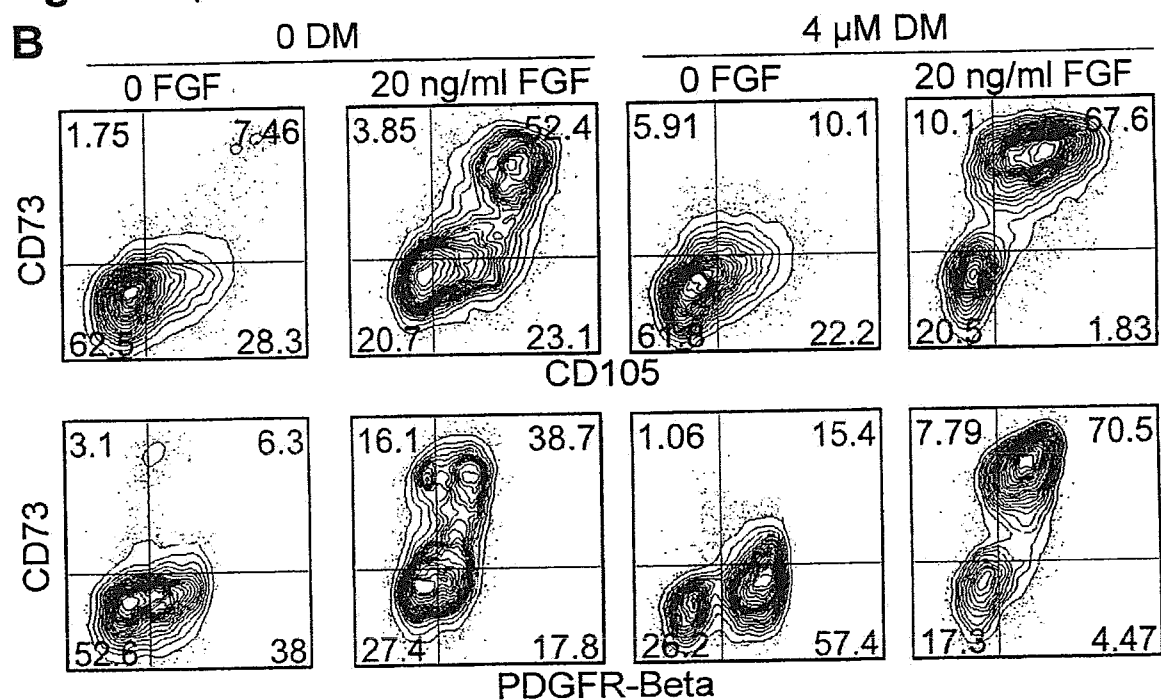


**Figure 2**

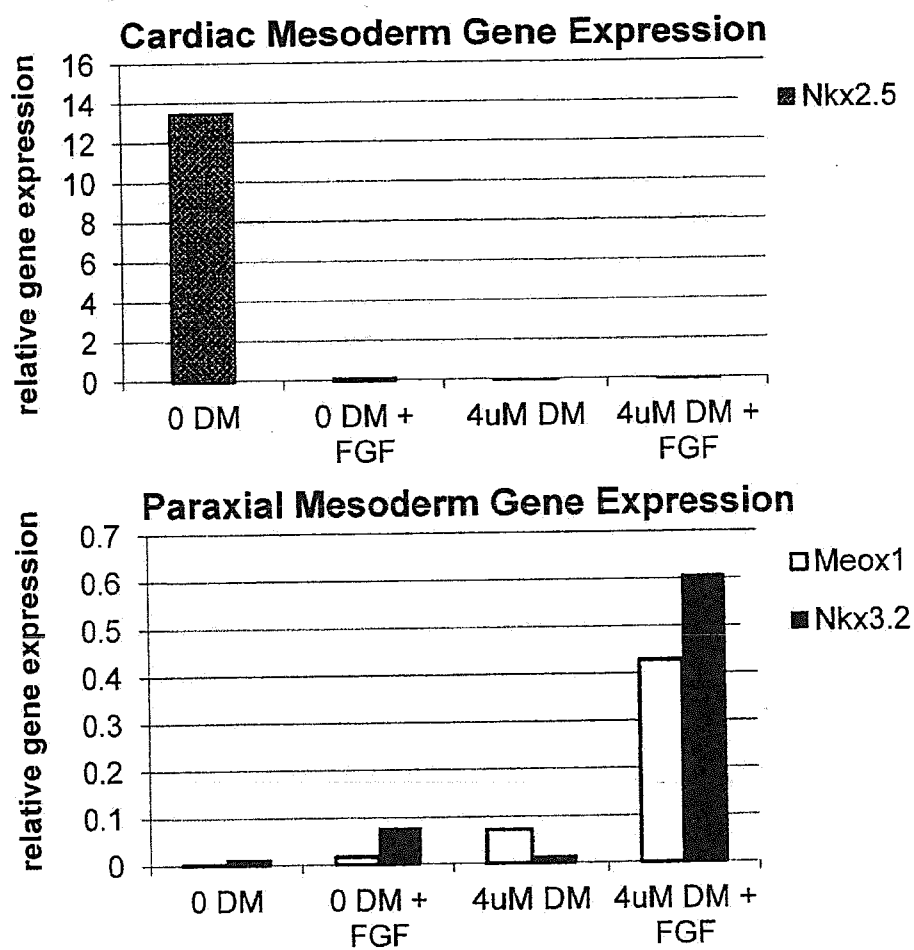
**A**



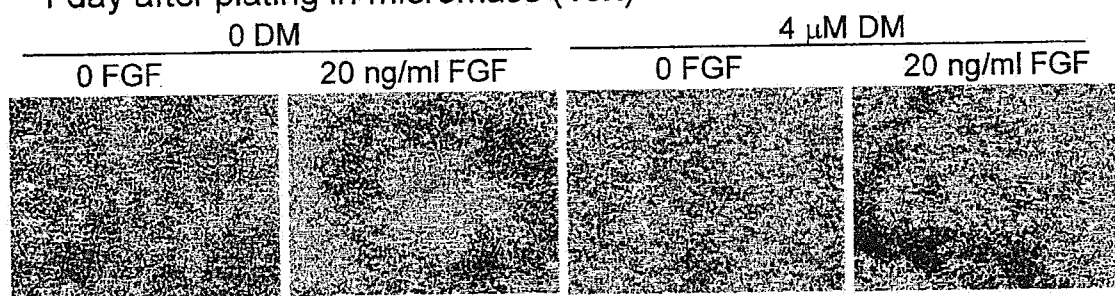
**Figure 2 (continued)**



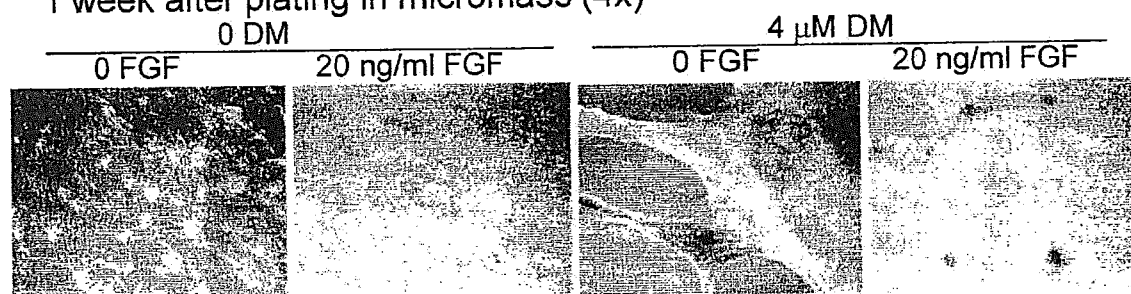
**Figure 2D (continued)**



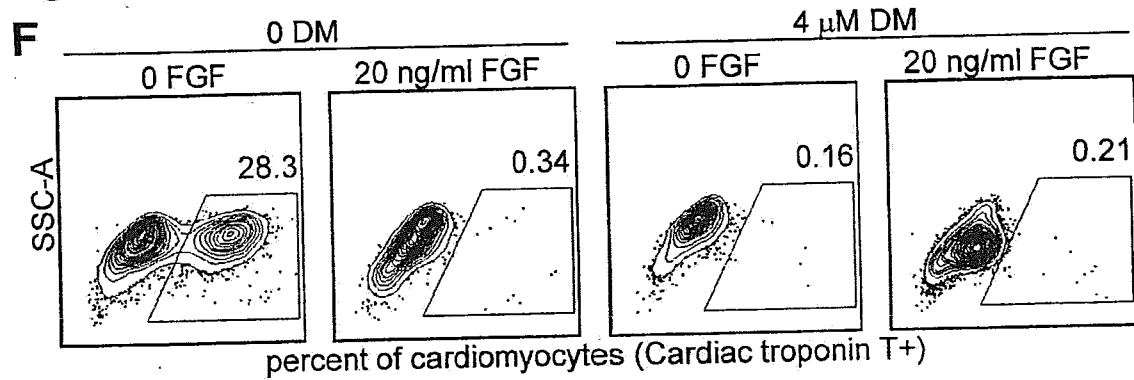
**E** 1 day after plating in micromass (10x)



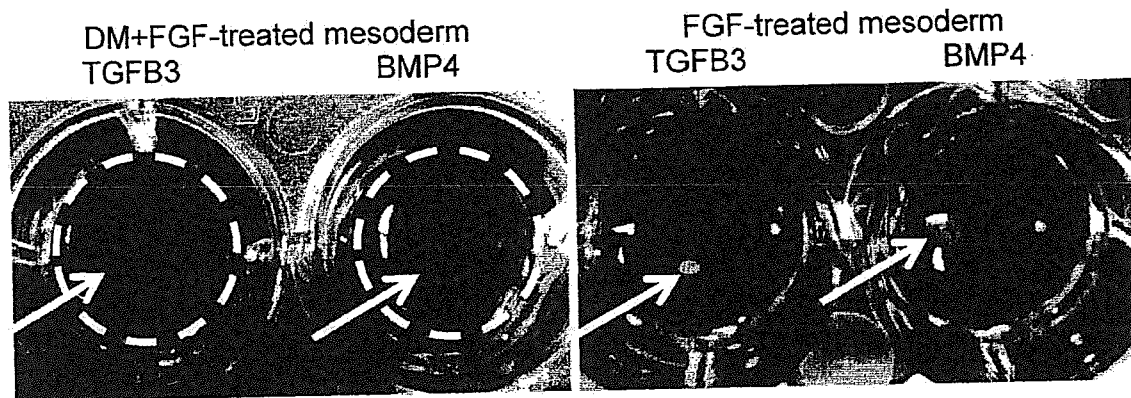
1 week after plating in micromass (4x)



**Figure 2 (continued)**

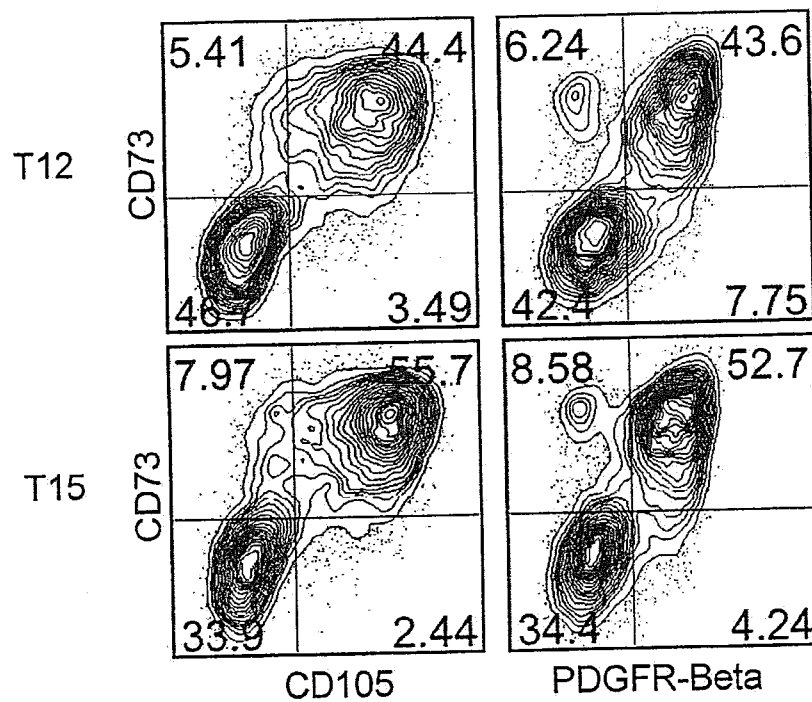


**G** 4 week old micromasses



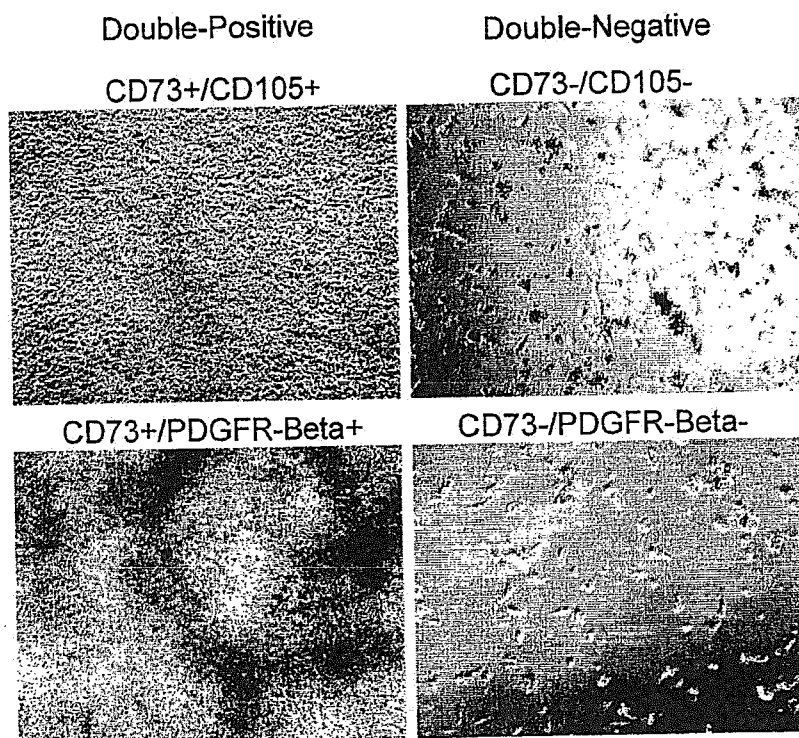
**Figure 3**

**A**

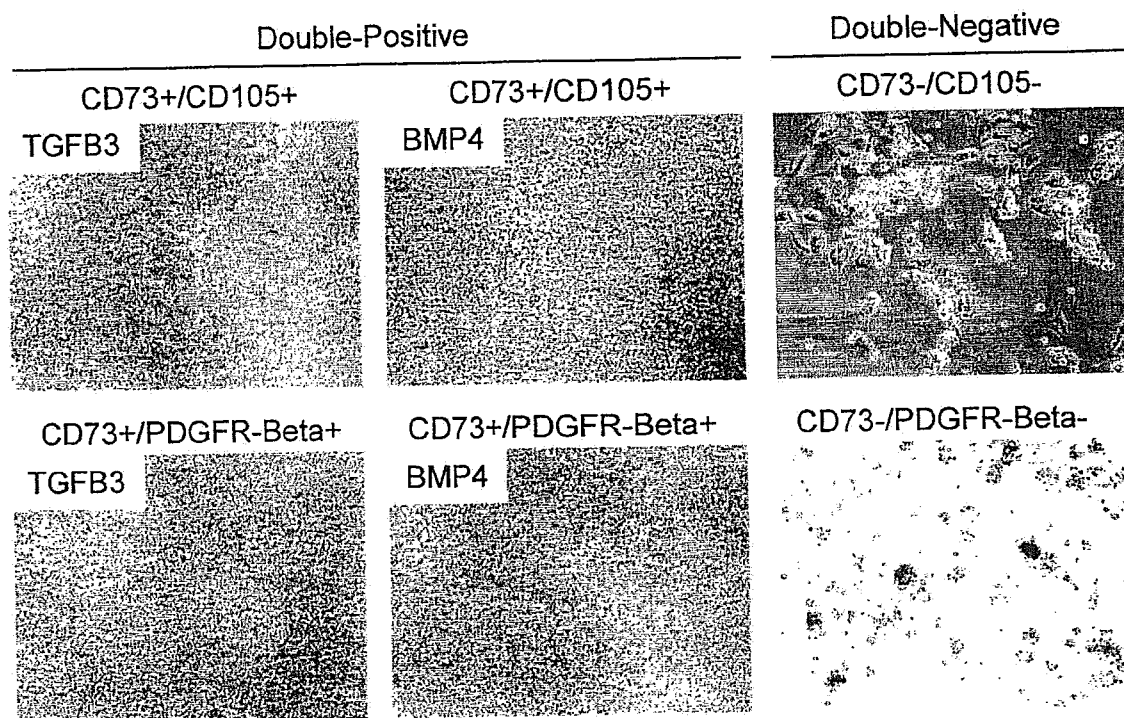


## Figure 3 (continued)

**B** after 10 days in micromass (5x)

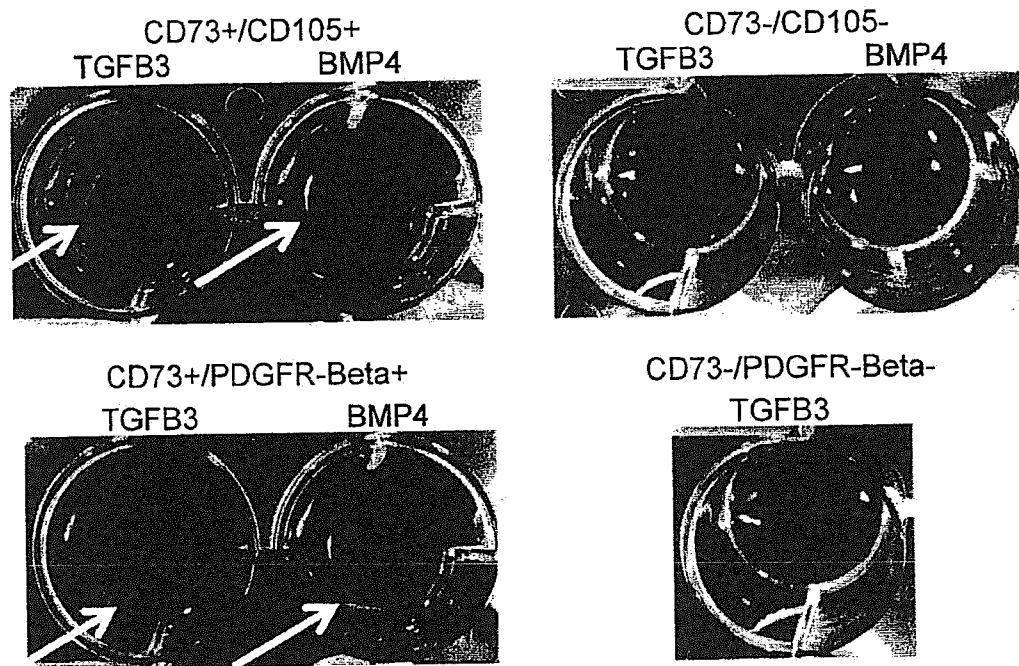


**C** after 2 weeks in micromass (10x)

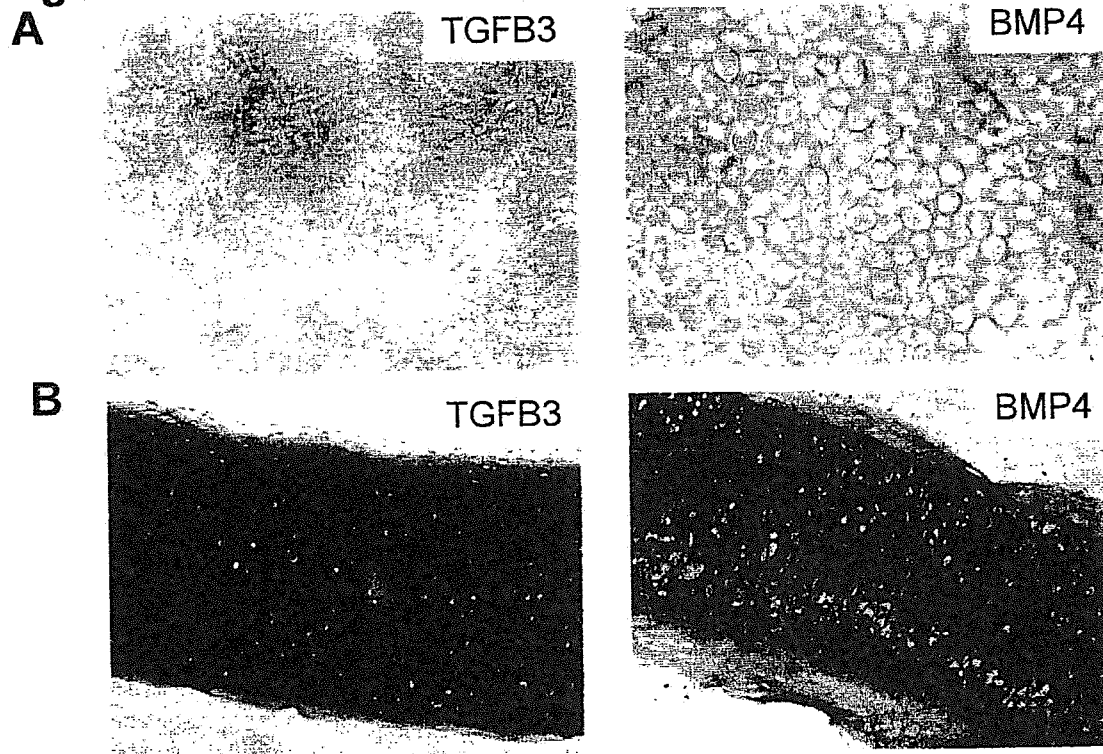


**Figure 3 (continued)**

**D** micromasses after 5 weeks



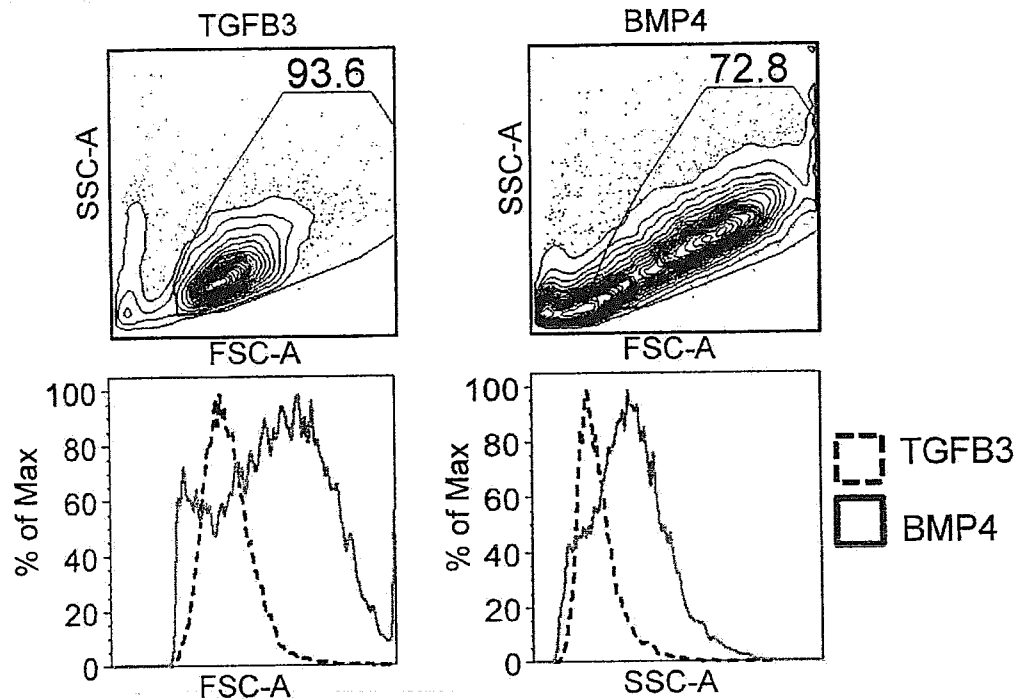
**Figure 4**



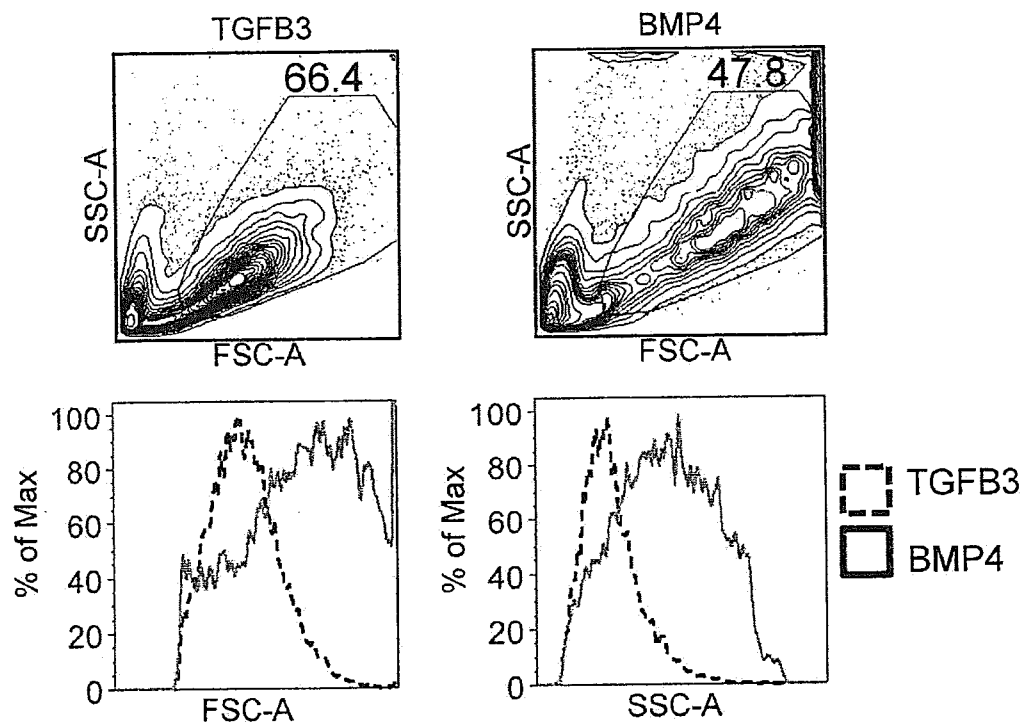
**Figure 4 (continued)**

**C**

3 week micromass



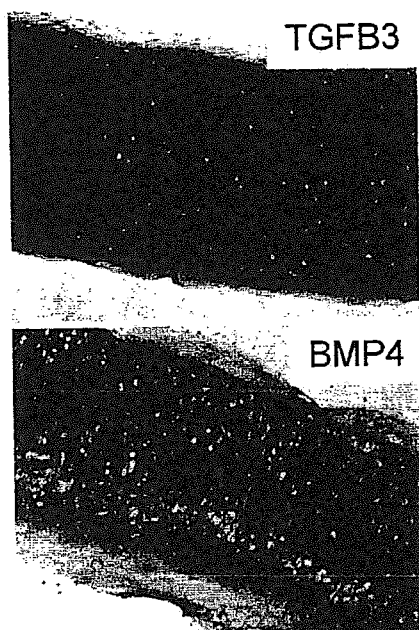
5 week micromass



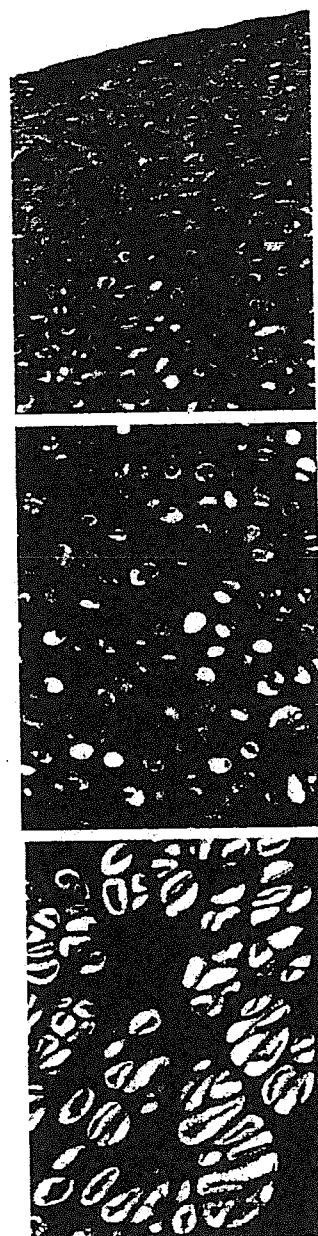
**Figure 4 (continued)**

**D**

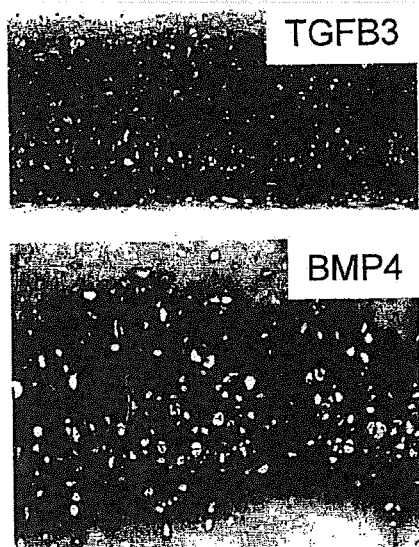
hESC-derived



human fetal femur



primary fetal chondrocyte-derived



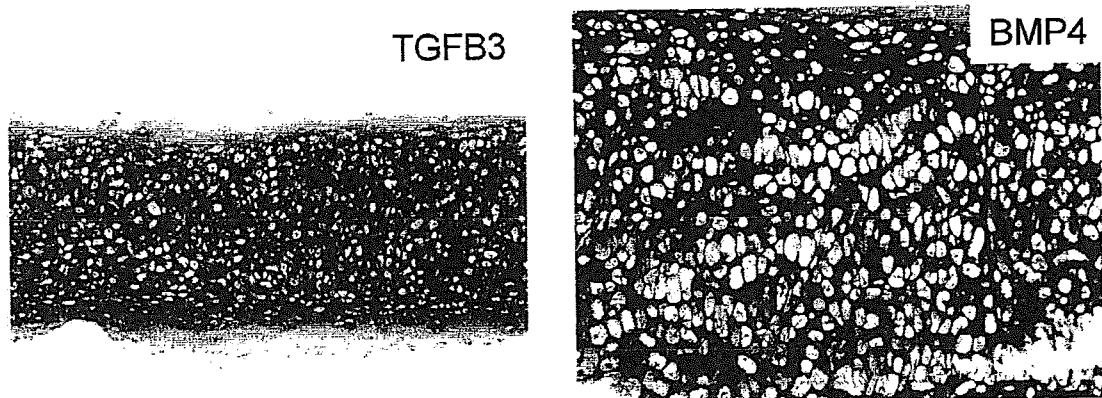
**E**



**Figure 4 (continued)**

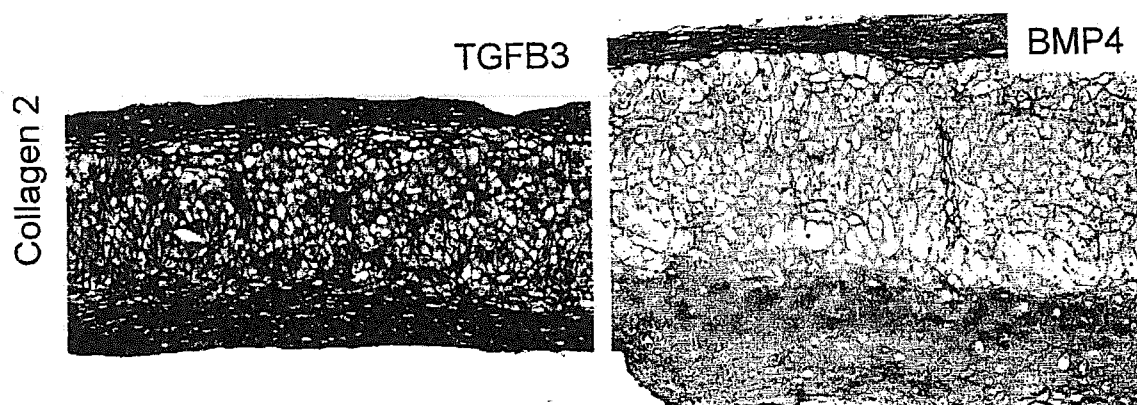
**F**

hiPSC derived cartilage tissues  
Stained with Toluidine blue

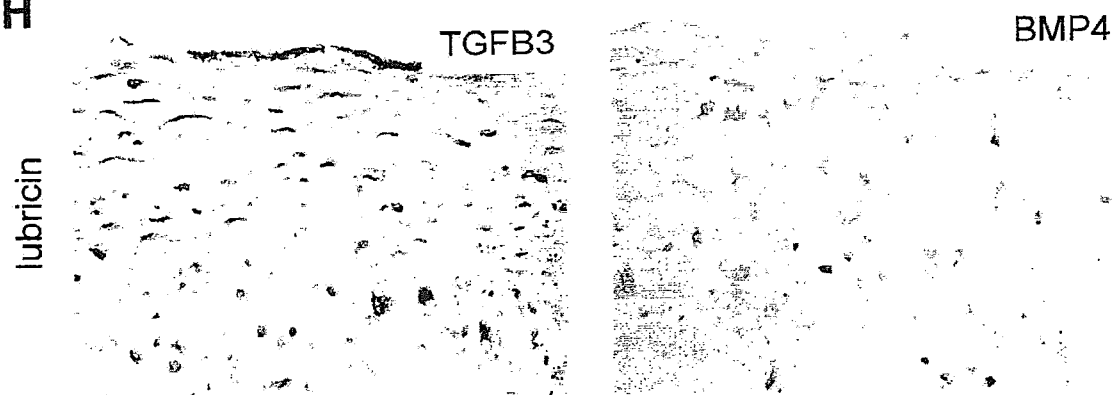


**G**

hESC derived cartilage tissues  
Stained with COL2 and lubricin



**H**



**Figure 5**

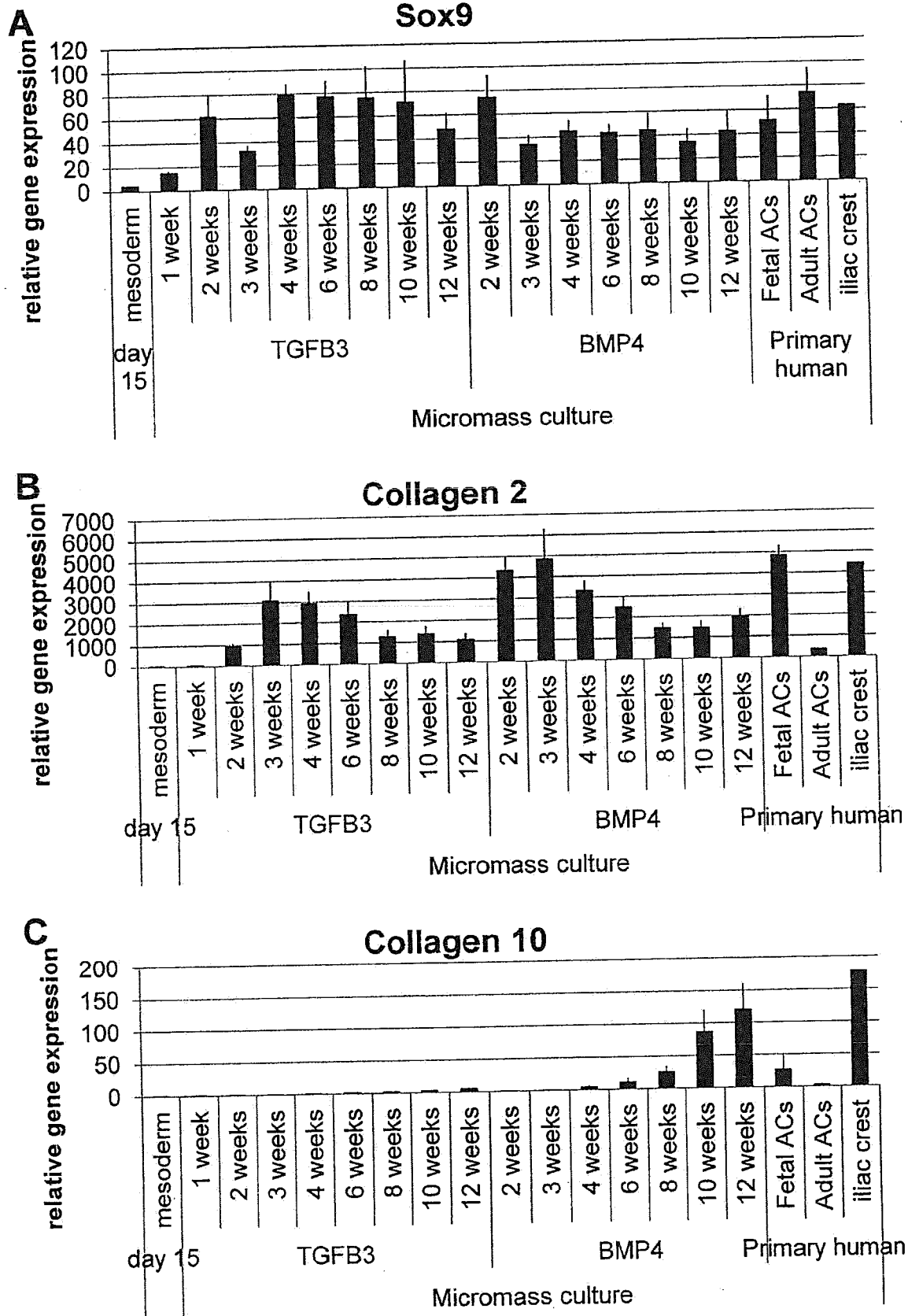


Figure 5 (continued)

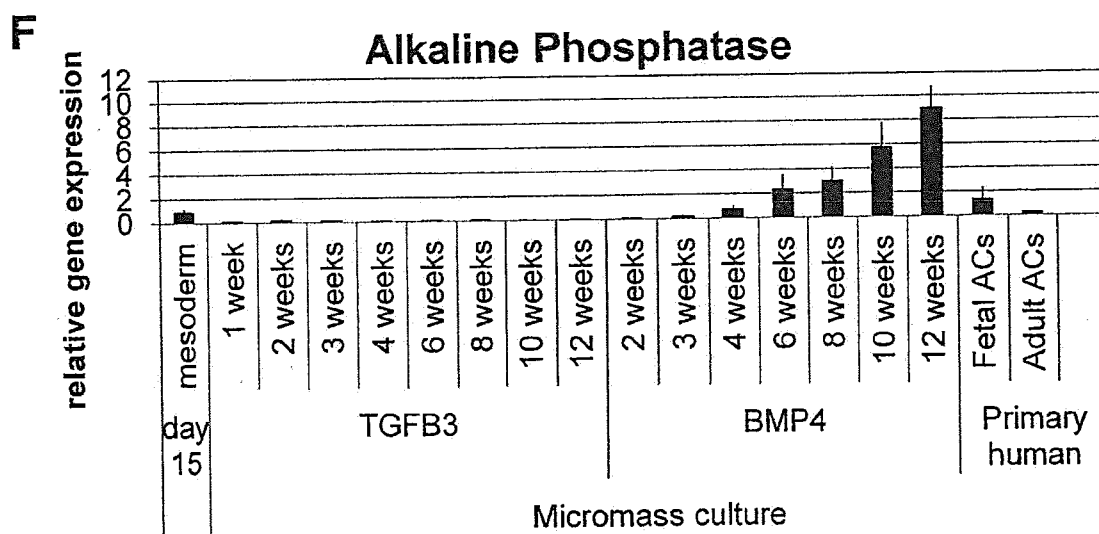
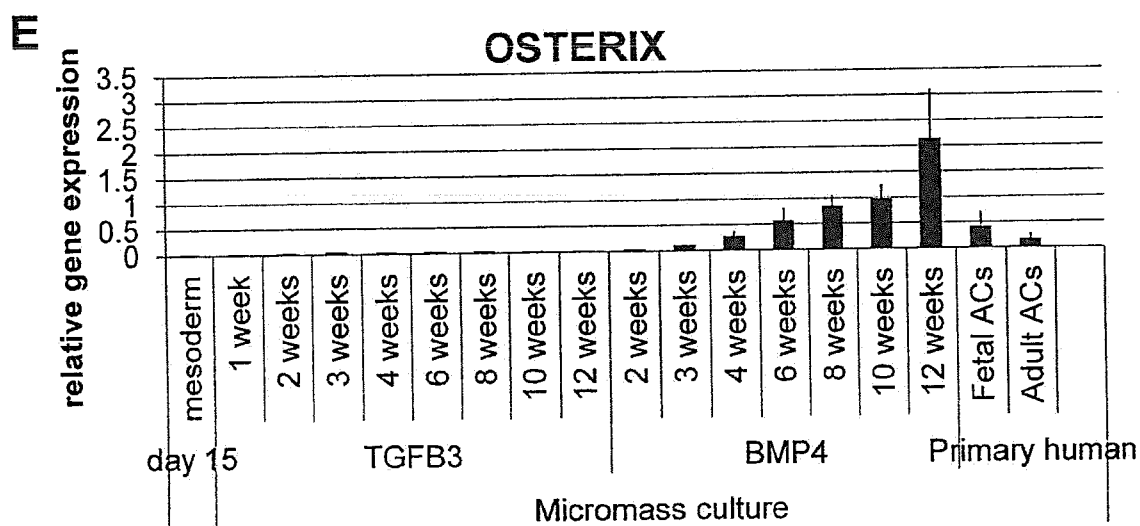
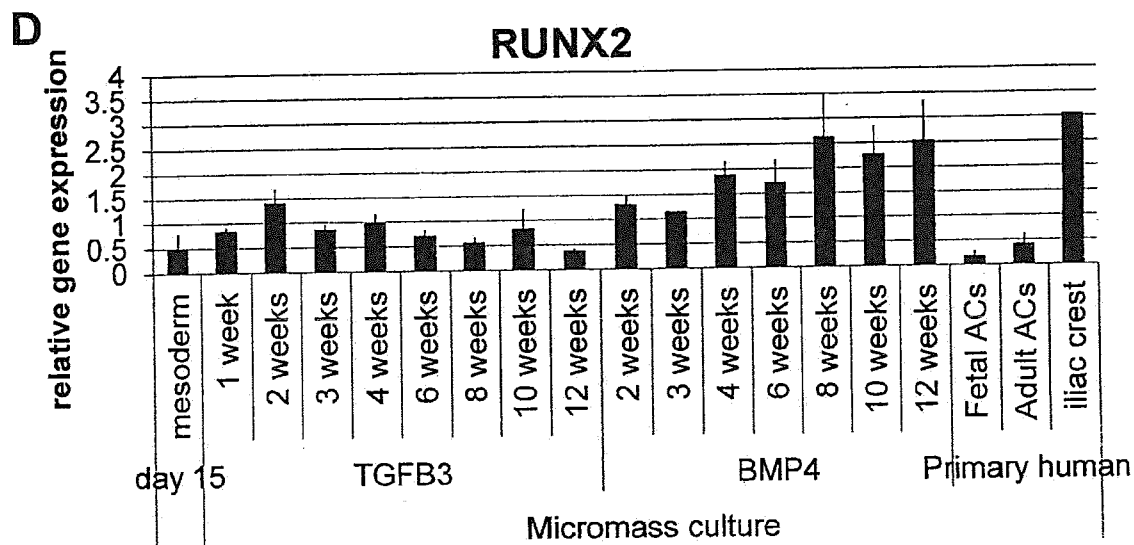


Figure 5 (continued)

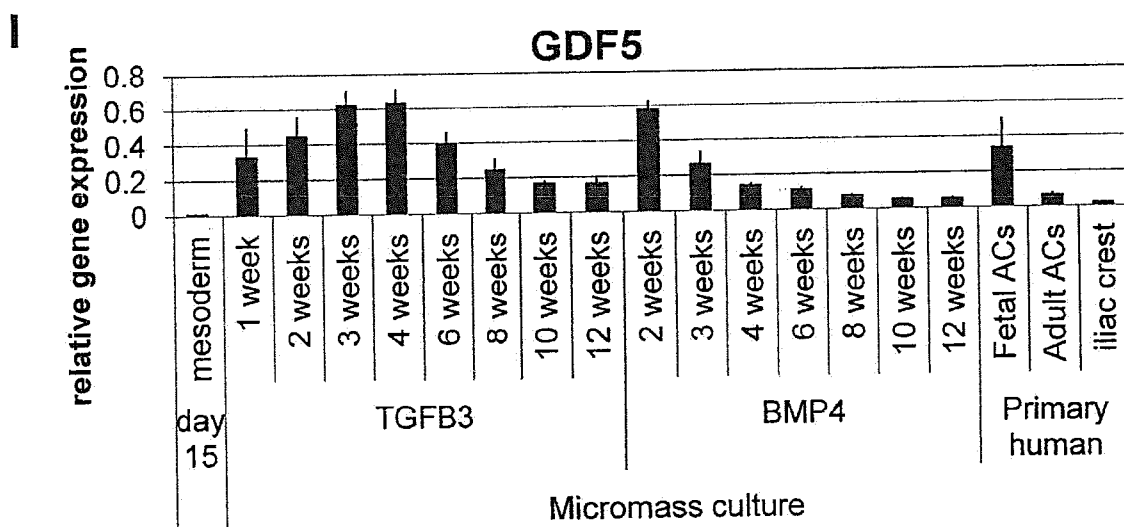
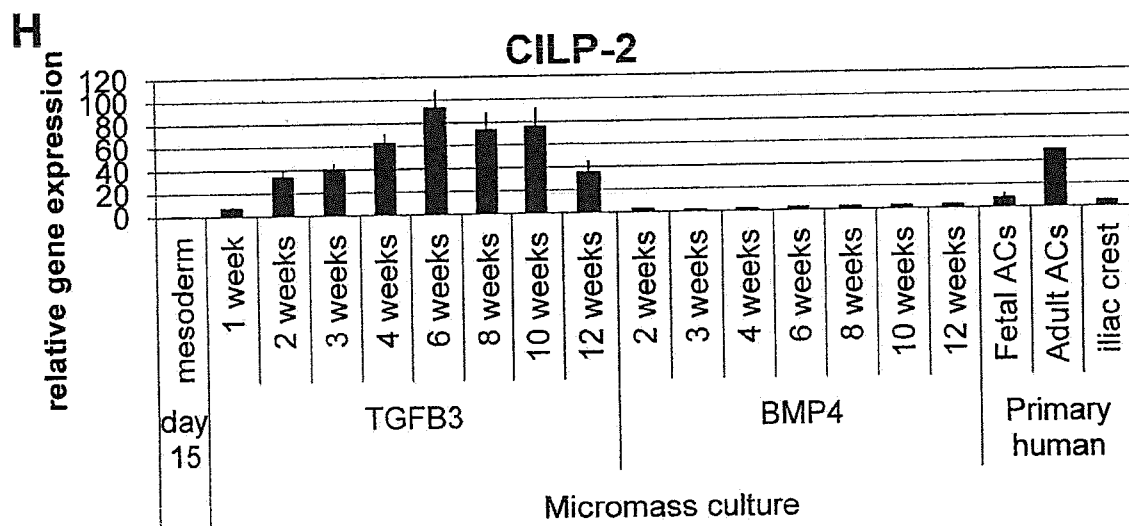
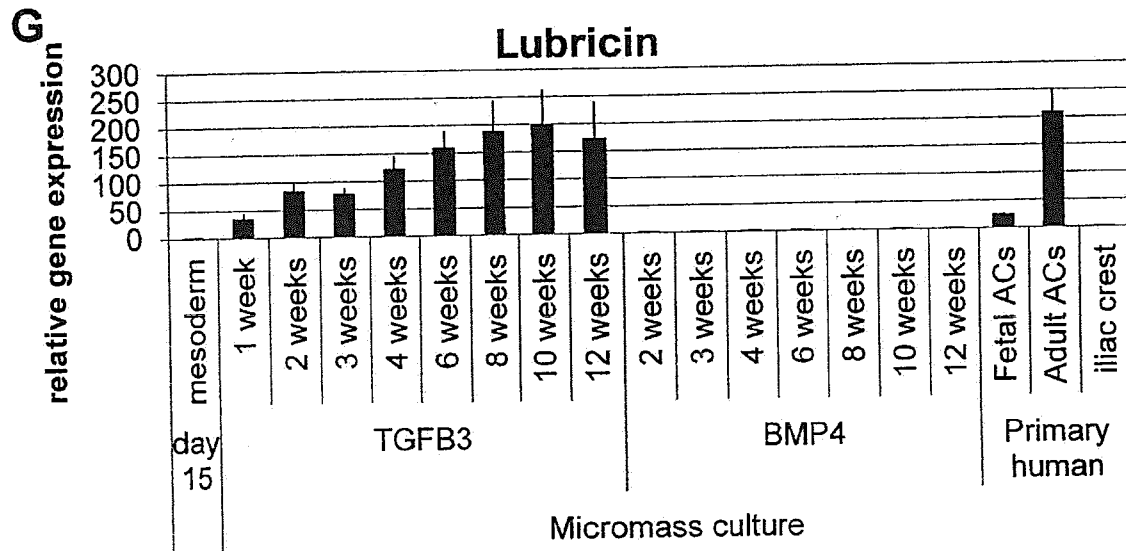


Figure 5 (continued)

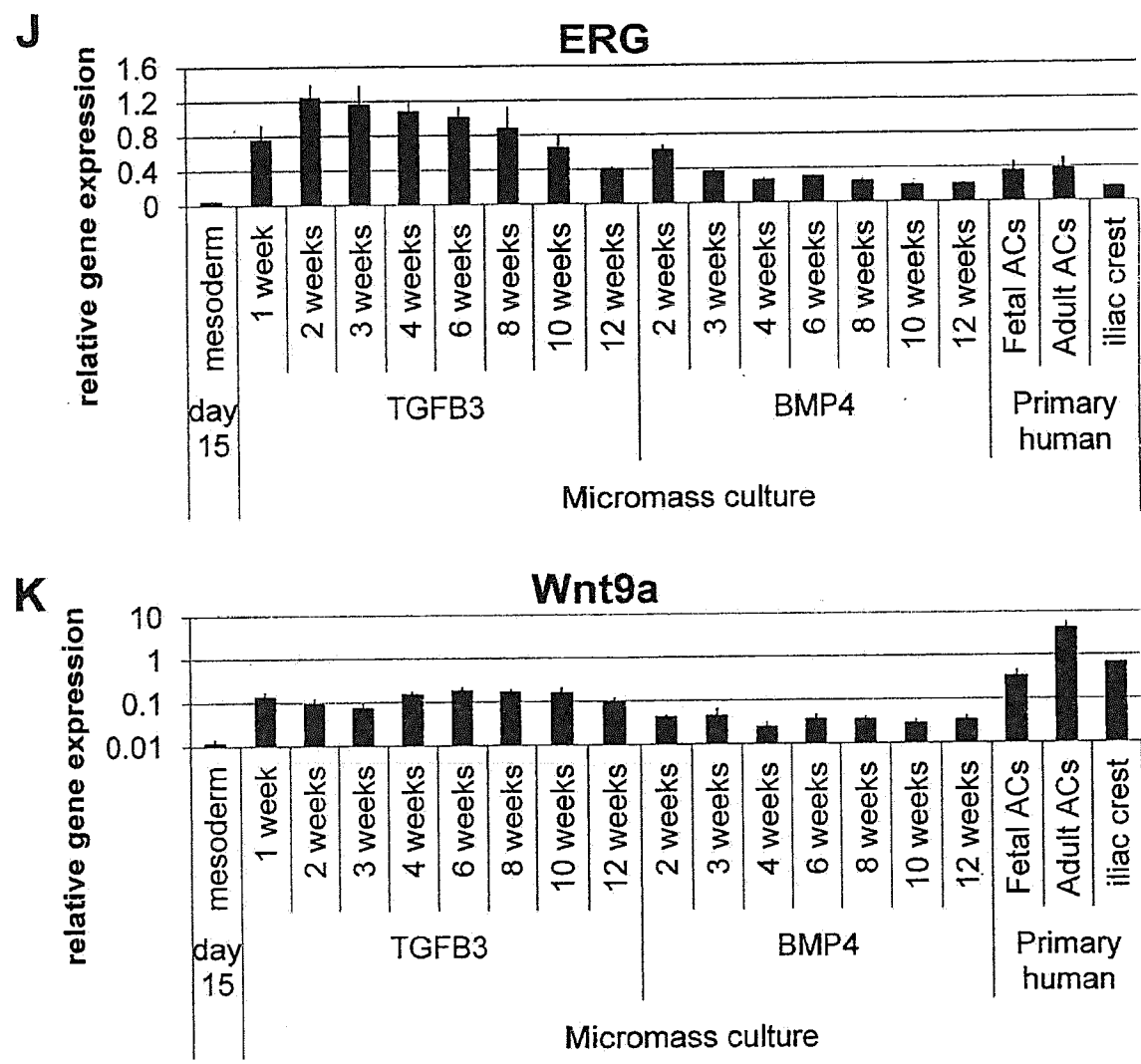
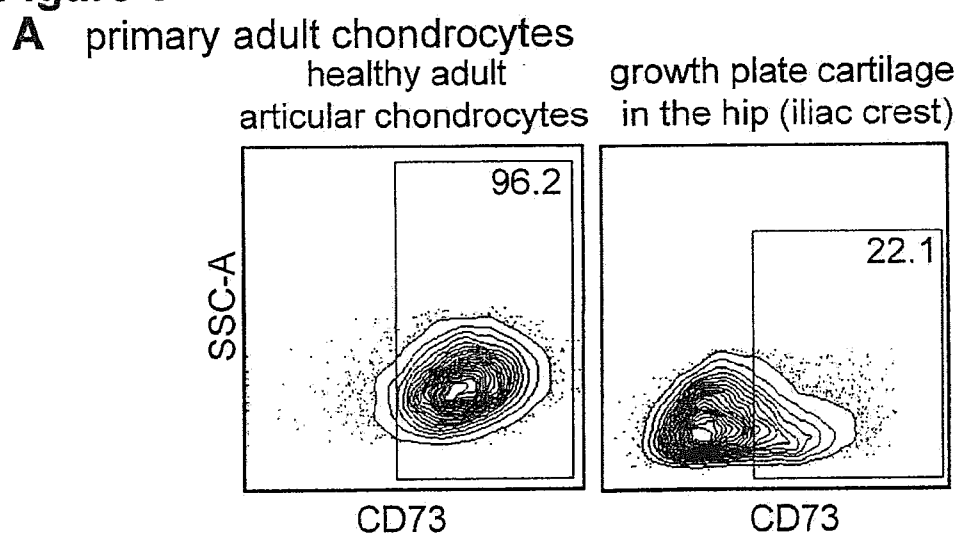


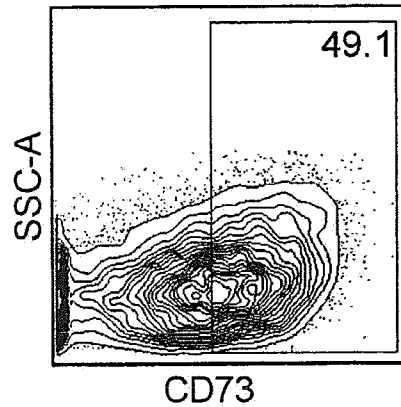
Figure 6



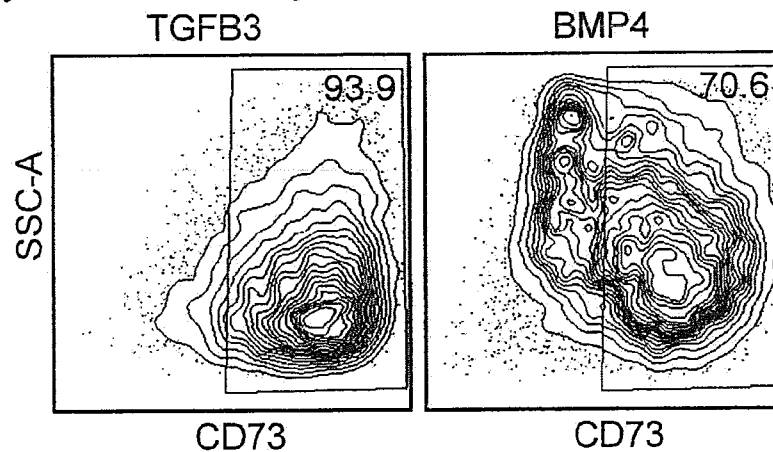
**Figure 6 (continued)**

**B** primary fetal chondrocytes

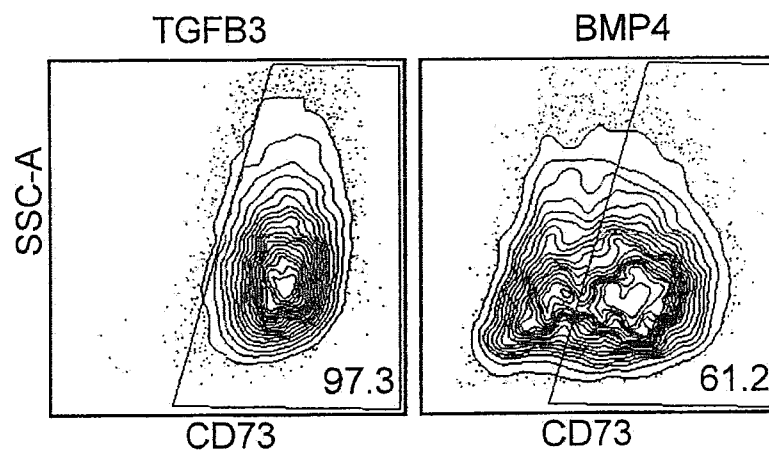
19 weeks old



**C** primary fetal chondrocytes in micromass after 10 weeks

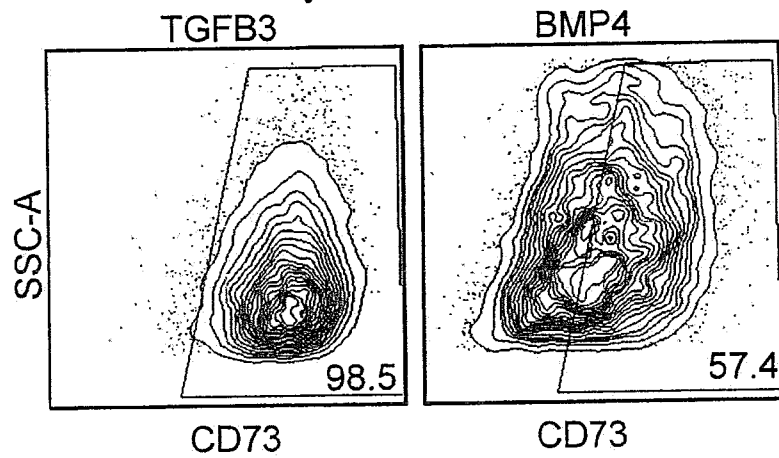


**D** passage 2 fetal chondrocytes in micromass after 9 weeks

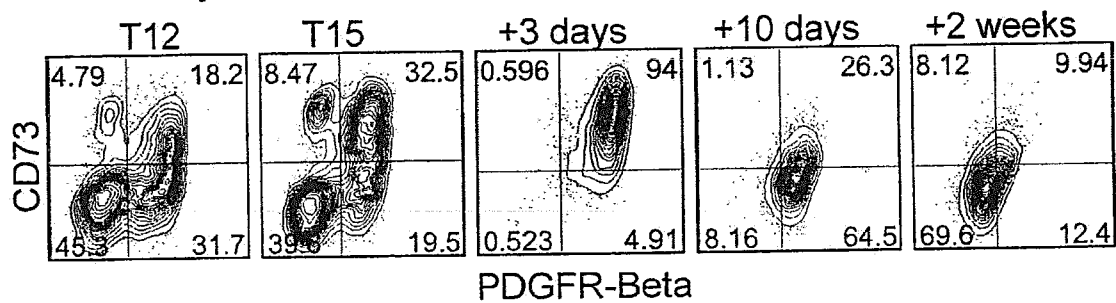


## Figure 6 (continued)

### E hPSC-derived chondrocytes in micromass after 11 weeks



### F monolayer culture transition to micromass culture



### G TGFB3-treated micromass culture

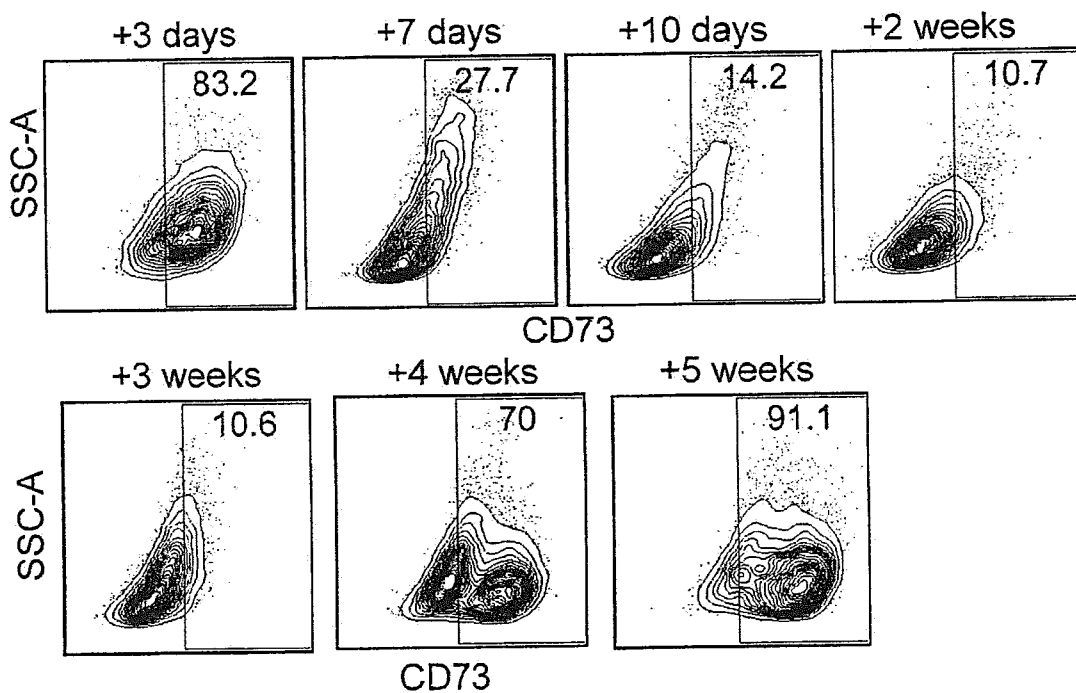
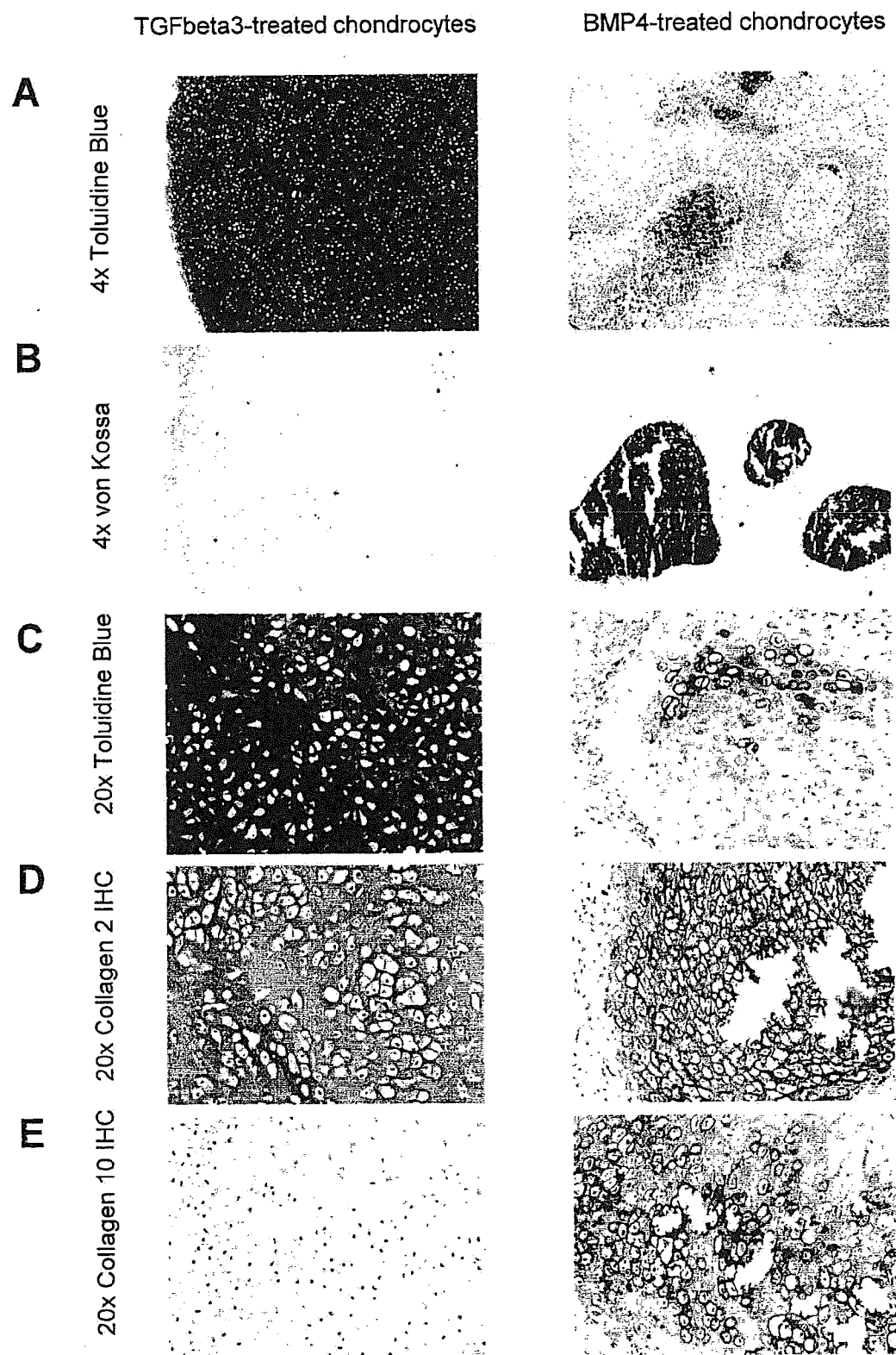
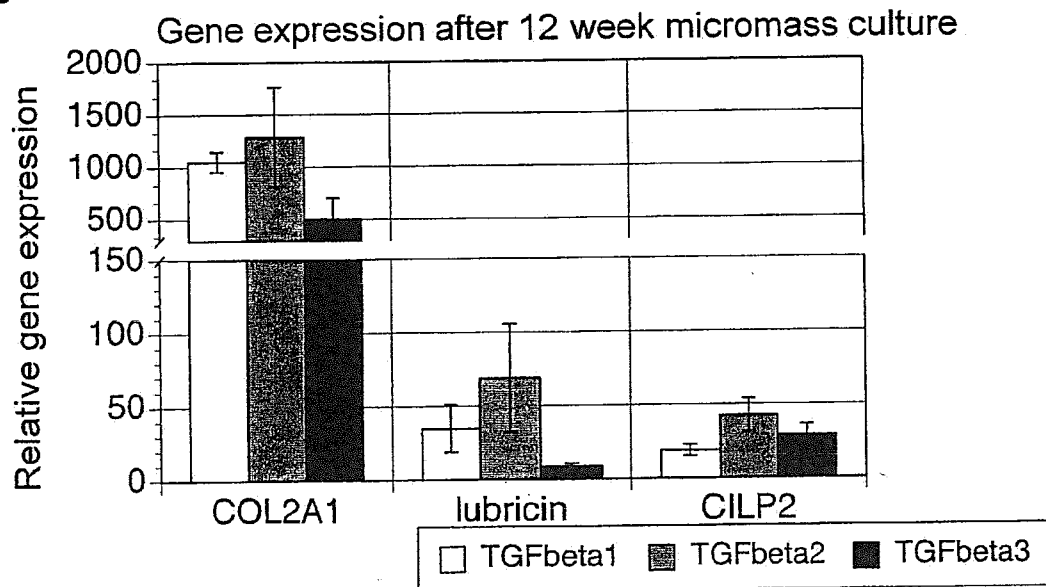


Figure 7

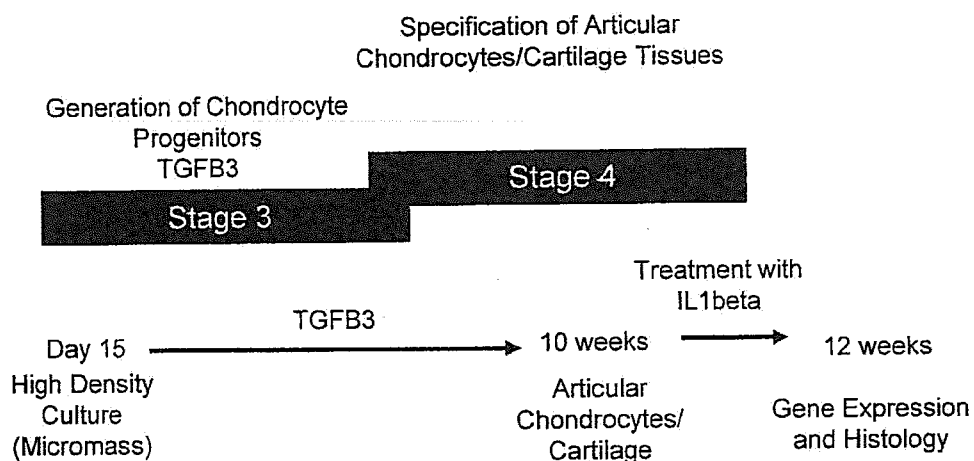


**Figure 8**

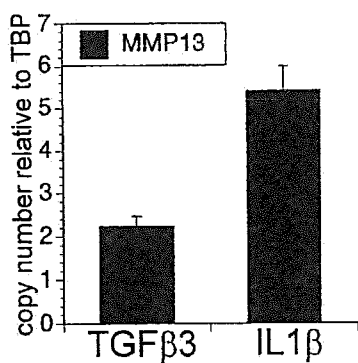


**Figure 9**

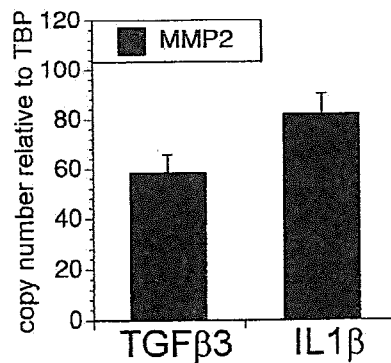
**A**



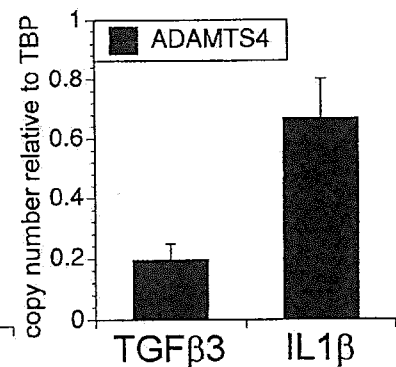
**B**



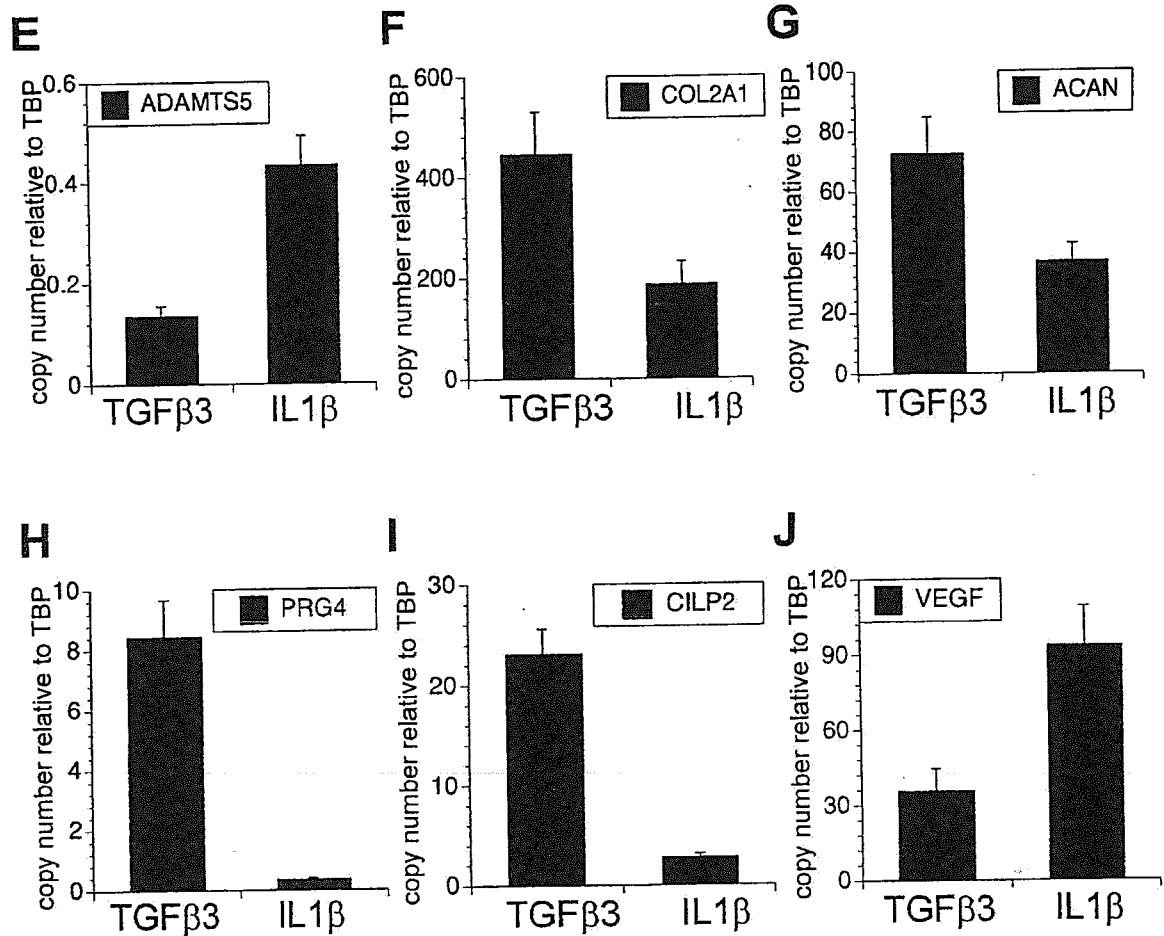
**C**



**D**



**Figure 9 (continued)**



**K** articular-like TGFβ3-treated      treated with IL1β for two weeks

