

ABSTRACT OF THE DISCLOSURE

Compositions of small molecules, matrices, and isolated cells including methods of preparation, and methods for differentiation, trans-differentiation, and proliferation of animal cells into the osteoblast cell lineage were described. Examples of osteogenic materials that were administered to cells or co-cultured with cells are represented by compounds of Formula II, IV, and VI independently or preferably in combination with a matrix to afford bone cells. Small molecule-stimulated cells were also combined with a matrix, placed with a cellular adhesive or material carrier and implanted to a site in an animal for bone repair. Matrix pretreated with compounds of Formula II, IV, and VI were also used to cause cells to migrate to the matrix that is of use for therapeutic purposes.

[Figure 1]