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(54) **COMPOSITIONS OF MESENCHYMAL STEM CELLS TO REGENERATE BONE**

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This patent is subject to a terminal disclaimer.

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CPC ..... ***A61K 35/28*** (2013.01); ***C12N 5/0663*** (2013.01); *A61K 2035/124* (2013.01); *C12N 2501/385* (2013.01); *C12N 2501/415* (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

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(57) **ABSTRACT**

The present invention encompasses an osteogenic composition comprising mesenchymal stem cells pre-cultured in the presence of an agent that accelerates canonical Wnt signaling therein. Also, provided are osteogenic compositions incorporated into a biocompatible gel. The present invention provides methods for treating bone degeneration or injury associated with a pathophysiological condition in a mammal or for accelerating repair of a skeletal injury in a mammal by administering to the mammal or contacting the site of injury with the osteogenic composition.

**19 Claims, 28 Drawing Sheets**