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(12) **United States Patent**  
**Fraser et al.**

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(54) **METHODS OF USING REGENERATIVE CELLS IN THE TREATMENT OF STROKE AND RELATED DISEASES AND DISORDERS**

(58) **Field of Classification Search**  
None  
See application file for complete search history.

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(57) **ABSTRACT**

Cells present in adipose tissue are used to stroke and stroke related diseases and disorders in a patient. Methods of treating patients include processing adipose tissue to deliver a concentrated amount of regenerative cells obtained from the adipose tissue to a patient. The methods may be practiced in a closed system so that the regenerative cells are not exposed to an external environment prior to being administered to a patient. Accordingly, in a preferred method, cells present in adipose tissue are placed directly into a recipient along with such additives necessary to promote, engender or support a therapeutic benefit.

**15 Claims, 22 Drawing Sheets**

(21) Appl. No.: **13/586,735**

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(65) **Prior Publication Data**

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**Related U.S. Application Data**

(63) Continuation of application No. 10/884,861, filed on Jul. 1, 2004, now abandoned, which is a continuation-in-part of application No. 10/316,127, filed on Dec. 9, 2002, now abandoned.

(60) Provisional application No. 60/338,856, filed on Dec. 7, 2001.

(51) **Int. Cl.**

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(52) **U.S. Cl.**

CPC ..... **A61K 35/28** (2013.01); **A61K 35/12** (2013.01); **A61K 35/36** (2013.01); **A61K 35/44** (2013.01); **A61K 38/1866** (2013.01); **A61K 45/06** (2013.01); **C12N 5/069** (2013.01); **C12N 5/0667** (2013.01); **C12N 2506/1384** (2013.01)

