

## Technical Research Documents and Medical Publications for:

### Heart Disease

Animals have been treated with human dental pulp stem cells to treat heart injury caused by a heart attack.

#### PAPER 1:

**Human dental pulp stem cells improve left ventricular function, induce angiogenesis, and reduce infarct size in rats with acute myocardial infarction.**

Gandia C, Armiñan A, García-Verdugo JM, Lledó E, Ruiz A, Miñana MD, Sanchez-Torrijos J, Payá R, Mirabet V, Carbonell-Uberos F, Llop M, Montero JA, Sepúlveda P.

Stem Cells. 2008 Mar;26(3):638-45. PMID: 18079433

<http://www.ncbi.nlm.nih.gov/pubmed/18079433>

Dental pulp stem cells can be used to create new blood vessels. They could be used in the treatment of heart damage from heart attack, and to grow blood vessels to give blood a route to regenerated tissue or tissue that has lost its blood supply.

#### PAPER 2:

**Human dental pulp-derived stem cells protect against hypoxic-ischemic brain injury in neonatal mice.**

Yamagata M, Yamamoto A, Kako E, Kaneko N, Matsubara K, Sakai K, Sawamoto K, Ueda M. Stroke 2013Feb;44(2):551-4. PMID:23238858

<http://www.ncbi.nlm.nih.gov/pubmed/23238858>

#### PAPER 3:

**Stem cells from human exfoliated deciduous tooth-derived conditioned medium enhance recovery of focal cerebral ischemia in rats.**

Inoue T, Sugiyama M, Hattori H, Wakita H, Wakabayashi T, Ueda M.

Tissue Eng Part A, 2013 Jan;19(1-2):24-9. PMID:22839964.

<http://www.ncbi.nlm.nih.gov/pubmed/22839964>

#### PAPER 4:

**A novel stem cell source for vasculogenesis in ischemia: subfraction of side population cells from dental pulp.**

Iohara K, Zheng L, Wake H, Ito M, Nabekura J, Wakita H, Nakamura H, Into T, Matsushita K, Nakashima M.

Stem Cells. 2008 Sep;26(9):2408-18. Epub 2008 Jun 26.. PMID: 18583536

<http://www.ncbi.nlm.nih.gov/pubmed/18583536>

**PAPER 5:**

**Intraventricular injection of human dental pulp stem cells improves Hypoxic-Ischemic brain damage in neonatal rats.**

Fang CZ, Yang YJ, Wang QH, Yao Y, Zhang XY, He XH. PLoS One. 2013 Jun 14;8(6). PMID: 23799131.

<http://www.ncbi.nlm.nih.gov/pubmed/?term=23799131>

FDA approves stem cell treatment for heart disease: Mayo clinic to test technique in human trial

**PAPER 6:**

**Stem cells will be used to fix damaged heart tissue, promising results in cardiac outflow were seen in patients tested in Europe.**

<http://www.medicaldaily.com/fda-approves-stem-cell-treatment-heart-disease-mayo-clinic-test-technique-human-trial-267408>