

All Databases PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Books

Search PubMed for [Advanced Search](#)

[Limits](#) [Preview/Index](#) [History](#) [Clipboard](#) [Details](#)

Display Show Sort By Send to

All: 1

1: [Lasers Med Sci.](#) 2008 Jul;23(3):277-82. Epub 2007 Aug 23.



The effect of low level laser irradiation on adult human adipose derived stem cells.

[Mvula B](#), [Mathope T](#), [Moore T](#), [Abrahamse H](#).

Laser Research Group, Faculty of Health Sciences, University of Johannesburg, PO Box 17011, Doornfontein, Johannesburg, South Africa.

This study investigated the effect of low level laser irradiation on primary cultures of adult human adipose derived stem cells (ADSC) using a 635-nm diode laser, at 5 J/cm(2) with a power output of 50.2 mW and a power density of 5.5 mW/cm(2). Cellular morphology did not appear to change after irradiation. Using the trypan blue exclusion test, the cellular viability of irradiated cells increased by 1% at 24 h and 1.6% at 48 h but was not statistically significant. However, the increase of cellular viability as measured by ATP luminescence was statistically significant at 48 h (p < 0.05). Proliferation of irradiated cells, measured by optical density, resulted in statistically significant increases in values compared to nonirradiated cells (p < 0.05) at both time points. Western blot analysis and immunocytochemical labeling indicated an increase in the expression of stem cell marker beta1-integrin after irradiation. These results indicate that 5 J/cm(2) of laser irradiation can positively affect human adipose stem cells by increasing cellular viability, proliferation, and expression of beta1-integrin.

PMID: 17713825 [PubMed - indexed for MEDLINE]

Related articles

- Effect of low-level laser irradiation and epidermal growth factor on adult hurr[Lasers Med Sci. 2009]
 - Initial effects of low-level laser therapy on growth and differentiation c[Wien Klin Wochenschr. 2008]
 - Effects of diode 808 nm GaAlAs low-power laser irradiat[Res Commun Mol Pathol Pharmacol. 2004]
 - Review* Adipose-derived stem cells: isolation, expansion and differentiation. [Methods. 2008]
 - Review* Ion cyclotron resonance as a tool in regenerative medicir [Electromagn Biol Med. 2008]
- » See reviews... | » See all...

Recent Activity

[Turn Off](#) [Clear](#)

- The effect of low level laser irradiation on adult human adipose derived stem cells.
- Effect of low-level laser irradiation and epidermal growth factor on adult human
- Helium-neon laser treatment transforms fibroblasts into myofibroblasts.
- [laser irradiation and ste... \(219\)](#) PubMed

Display Show Sort By Send to

[Write to the Help Desk](#)
[NCBI](#) | [NLM](#) | [NIH](#)
[Department of Health & Human Services](#)
[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)