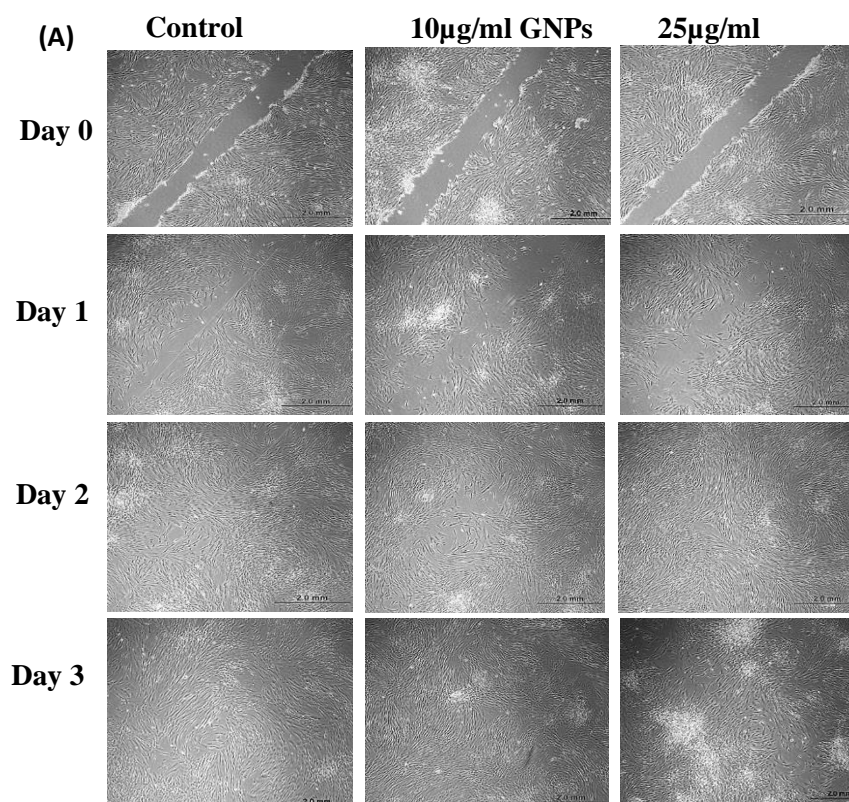


Cells migration assay:

Wound healing potential of GNPs for selected doses were assessed by cell migration ability. Initially, 1×10^5 cells were seeded in a 6-well plate and incubated to grow in a monolayer. This homogenous monolayer was then scratched using 200- μ l sterile pipette tip as the cells became 80% confluent in wells. Images were obtained using a phase contrast microscope at Day 0, Day 1, Day 2, and Day 3. Furthermore, percentage of covered area was measured through 'image j' software by comparing wound closure between control, 10 μ g/ml GNPs and 25 μ g/ml GNPs.

GNPs Pretreatment triggers cell migration

The facts revealing the interaction between the GNPs and MSCs is crucial to understand the potential effects of GNPs on biological systems from clinical point of view. The scratch wound assay is basically an in vitro model that depicts the in vivo incisional strategy ¹. Cell migration ability is commonly used to assess the proliferation and migration rate of cells under certain stimuli ². It also provides the important pathological and physiological insights like cell growth, inflammation, cancer metastasis and differentiation far beyond the healing of wound ³. GNPs treated hADMSCs exhibited the smooth proliferative potential as shown by the control cells (Fig 9A). Gold nanoparticles provide the protective, proliferative, and differential effects to mammalian cells depends upon the concentration, size, and morphology of GNPs ⁴. Plant mediated synthesis of GNPs also make them reliable for the proliferative potential of cells due to important bioactive components present in plant extract. Fig 9B depicted that GNPs treated hADMSCs covered the complete surface area of the well at day 3, as wound size became 0 in respective wells.



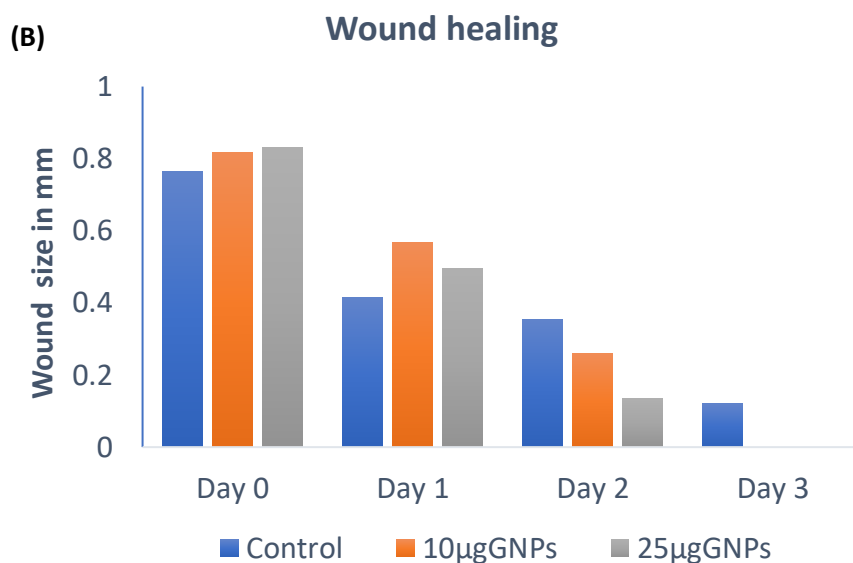


Figure: Cell migration assays: (A) Cells Migration potential of control hADMSCs and Preconditioned hADMSCs with GNPs at concentrations of 10µg/ml and 25µg/ml. (Scale bar ~2.00mm, Magnification = 4X) (B) Statistical analysis of wound closure performed by ‘image j’ software at Day 0, Day 1, Day 2, and Day 3. Size of wound showed in mm (millimeters), was reducing with the passage of time. At Day 3, no space was left to fill in GNPs treated hADMSCs.

1. E. Teplicki, Q. Ma, D. E. Castillo, M. Zarei, A. P. Hustad, J. Chen and J. Li, *Wounds: a compendium of clinical research and practice*, 2018, **30**, 263-268.
2. K. Muniandy, S. Gothai, W. S. Tan, S. S. Kumar, N. Mohd Esa, G. Chandramohan, K. S. Al-Numair and P. Arulselvan, *Evidence-based complementary and alternative medicine*, 2018, **2018**.
3. G. Tan and M. A. Onur, *Journal of Biomedical Materials Research Part A*, 2018, **106**, 1708-1721.
4. P. J. Chueh, R.-Y. Liang, Y.-H. Lee, Z.-M. Zeng and S.-M. Chuang, *Journal of hazardous materials*, 2014, **264**, 303-312.