Population doubling time (PDT) of the human umbilical cord-derived mesenchymal cells (hUC-MSC)

The proliferation rate and PDT of the isolated hUC-MSC at passage 2 were evaluated by counting cells every 24 hours. The PDT of UC-MSCs was 27,16 ± 3,67 h (Fig. 1).

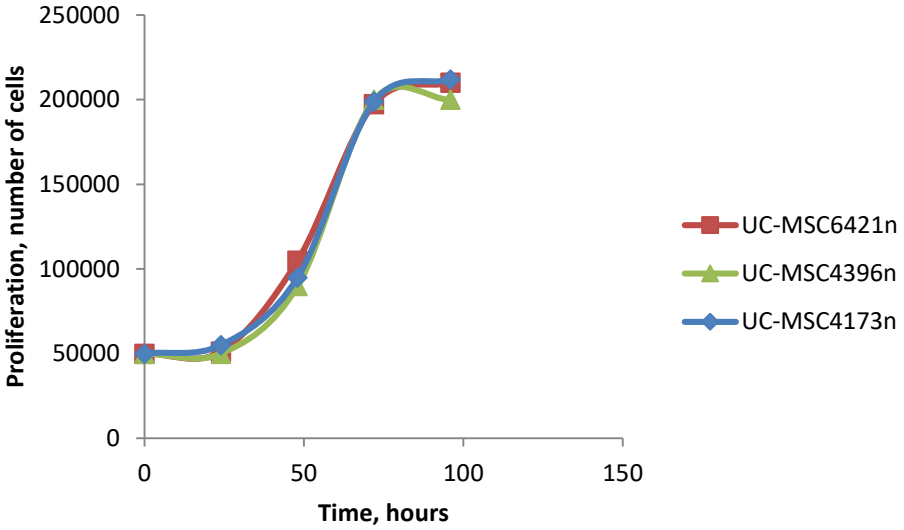

Figure 1. Proliferation rate and PDT of hUC-MSC at passage 2.

Umbilical cord-derived mesenchymal stem cells express mesenchymal cell surface markers

The expressions of mesenchymal cell surface markers were assessed in the isolated UC-MSCs by flow cytometry. Cells stained with antibodies labeled with fluorescent dyes against CD34, CD45, CD73, CD90, and CD105. Flow cytometry demonstrated that stem cells were positive for CD73 (98,4±2,2%), CD90 (99,67±0,3%), CD105 (98,7±1,1%) and negative for CD34 and CD45(Fig. 2).

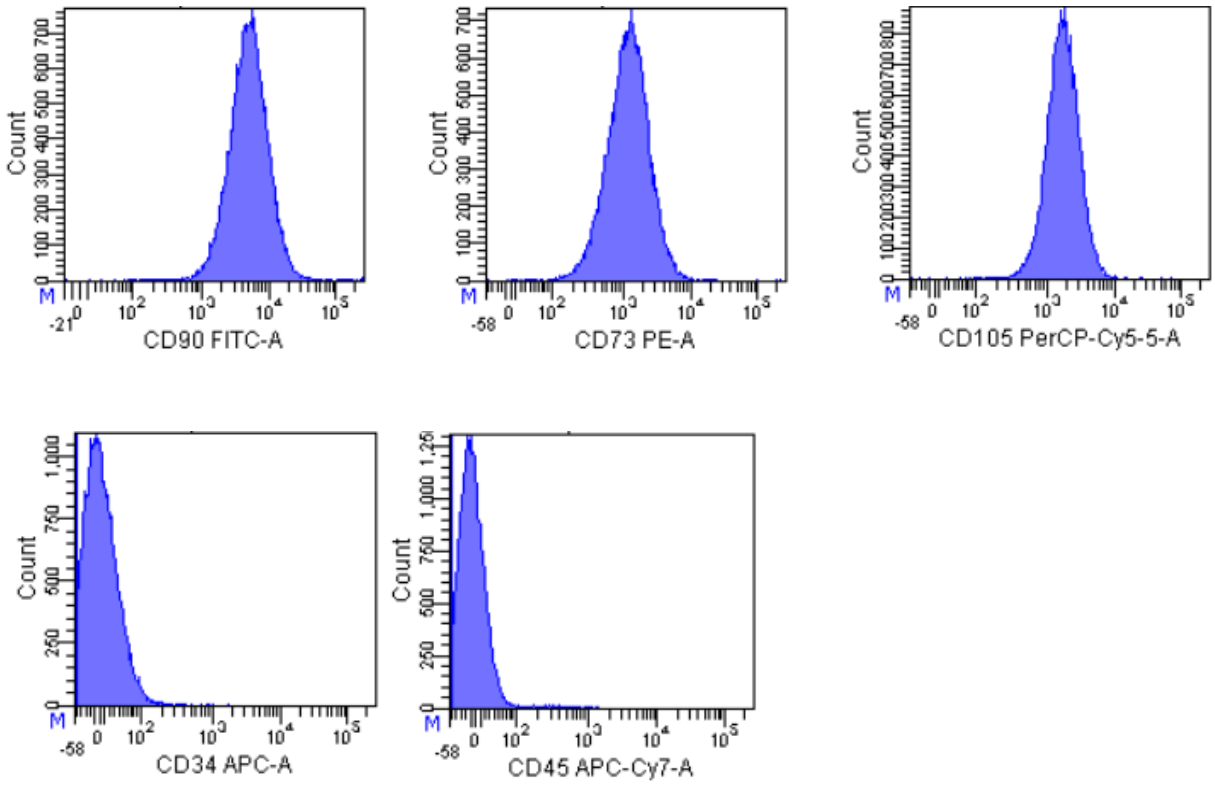

Figure 2. Expression of surface marker of the isolated hUC-MSCs. Flow cytometry analysis showed positive expression of mesenchymal stem cell markers (CD90, CD105, CD73) and negative expression of hematopoietic markers (CD34 and CD45) in hUC-MSCs at passage 2.

Human umbilical cord-derived mesenchymal stem cells maintained a normal karyotype without any numerical or structural abnormalities

The chromosomal stability of the isolated hUC-MSCs was evaluated by conventional cytogenetic analysis at passage 2. At this passage, the cells were generally characterized by a normal diploid karyotypes, with a typical chromosomal complement of 23 pairs of chromosomes. No evidence of any

numerical or structural chromosomal abnormalities was observed in the hUC-MSCs.

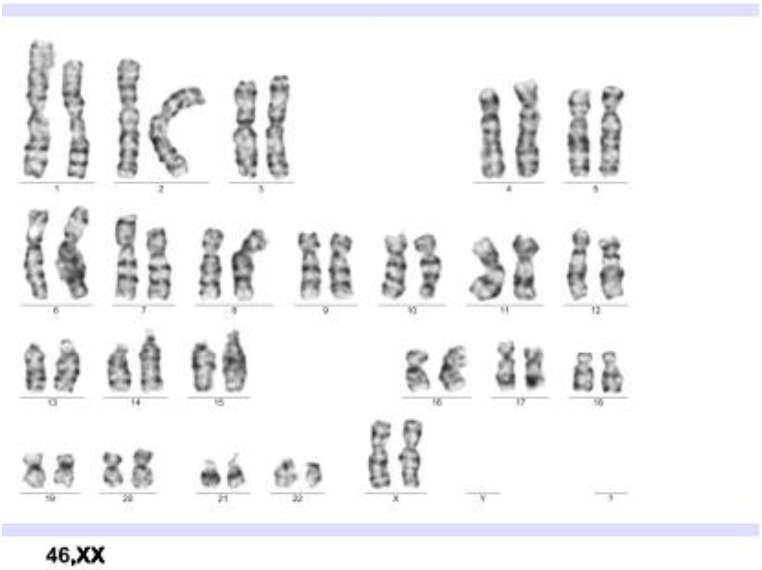

Figure 3. Metaphase spreads of cultured hUC-MSCs at passage 2. Photomicrograph of the metaphase spread viewed at the 100x magnification showing a typical chromosomal complement of 23 pairs of chromosomes, each with the classic appearance of four arms attached at the centromere.