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CD34+ ENUMERATION FROM VENA PUNCTURE VS FINGER PRICK COLLECTION FOR STEMCELLS THERAPYA. Chow¹, J. Riswandani², P. Yuliana¹, D. Mutica^{2,3}, B. Putera^{2,3}, Y. Dirgantara¹, C.R. Sartika⁴, Y. Surjawan^{4,5}¹Research & Development, PT Prodia StemCell Indonesia, Jakarta, Indonesia, ²Operational, PT Prodia StemCell Indonesia, Jakarta, Indonesia, ³Medicine Faculty, Hasanuddin University, Makassar, Indonesia, ⁴PT Prodia StemCell Indonesia, Jakarta, Indonesia, ⁵PT Prodia Widyahusada, Jakarta, Indonesia

Background: CD34+ had been used to determine the right time for harvesting stem cell in therapy. Venipuncture usually used to collect samples for CD34+ enumeration using flow cytometry. However, puncturing the veins has some disabilities such as collapse veins and could effect the angiogenesis in stem cell therapy. Finger pricked was suggested as an alternative for sampling blood of CD34+.

Objective: This study is used to compare the CD34+ enumeration from samples collected from finger prick and venipuncture.

Method: Four healthy subjects were used to determine the enumeration of CD34+ in the body using CD34+ using flow cytometry. Blood was collected for finger prick and veins on each subjects using EDTA tube at minimal volume of 1 mL. On the same day, CD34+ enumeration was performed using Stem Cell Enumeration Kit from BD Biosciences. Samples were run on FACS Canto II and FACS Canto Clinical Software.

Result: As the comparison in healthy patient (n = 4) the mean of CD34+ enumeration from venipuncture sample is lower than finger prick. The mean of Venipuncture CD34+ is 0.75 SD 0.28 and Finger Prick is 1.11 SD 1.49. Statistic analysis using compare T-test shows $t_{\text{count}} = 1.052$ and $t_{\text{table}} = 2.571$. The t_{count} is lower than t_{table} show ($1.052 < 2.571$).

Conclusion: There is no difference between the technique sampling from venipuncture and finger prick for CD34+ enumeration.

Keywords: CD34+ enumeration, venipuncture, Finger Prick collection, stemcells therapy.

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EXPRESSION OF HSC AND VSEL POPULATIONS IN MANUAL VS AUTOMATED PROCESSED UMBILICAL CORD BLOOD

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Background and Objectives: Umbilical cord blood (UCB) is one of the richest sources of primitive stem cells. A recent study showed that not only Hematopoietic Stem Cells (HSC) but also very small embryonic-like stem cells (VSEL) found in UCB. These rare cells have high potential interest for regenerative medicine and play an important role in tissue or organ injury repair. For therapy purposes, it is important to know the best method to produce high populations of stem cells. In this study, we compare UCB stem cells processed by manual

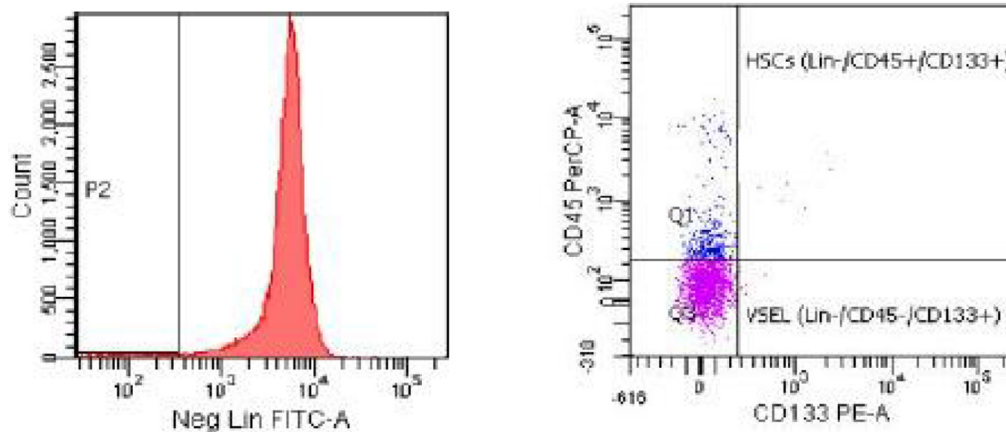


Figure 1. Expression of HSC and VSEL in manual processed UCB.

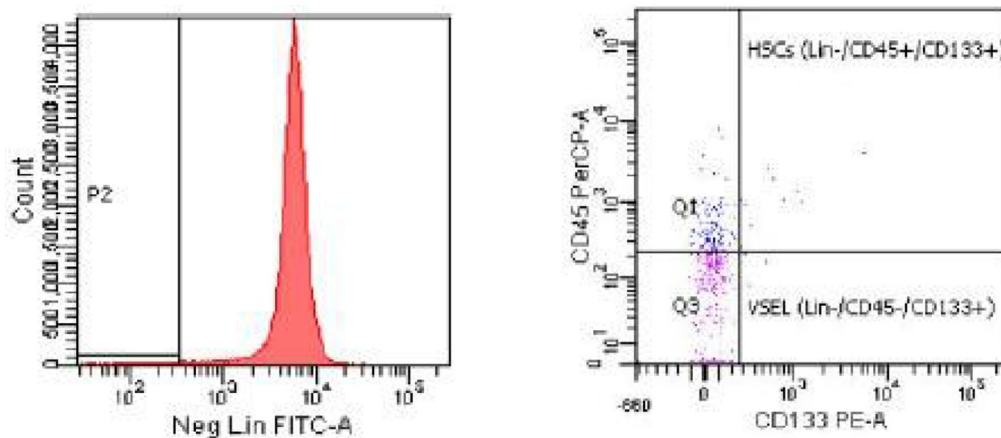


Figure 2. Expression of HSC and VSEL in automated processed UCB.