Pengaruh jumlah perlakuan simpan beku (-20C) derajat celsius terhadap pelepasan faktor pertumbuhan dari konsentrat trombosit unit transfusi darah PMI = Effect of freeze thaw cycle treatment (-20C) degrees celsius to levels of growth factors release from platelet concentrates of unit of blood transfusion PMI

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Abstrak

[ABSTRAK
Platelet Rich Plasma (PRP) diketahui dapat digunakan untuk menggantikan serum hewan sebagai suplemen media kultur sel meskipun sudah kadaluwarsa sampai tiga minggu. Berbagai metode pemrosesan PRP sebelum digunakan menyebabkan hasil yang tidak konsisten pada kultur sel. Hal tersebut diduga karena kadar faktor pertumbuhan dan jumlah trombosit yang bervariasi pada PRP. Penelitian ini bertujuan untuk mengetahui cara pemprosesan PRP yang memberikan hasil kadar faktor pertumbuhan tertinggi dan mengetahui hubungan kadar faktor pertumbuhan dan jumlah trombosit sebelum dan sesudah kadaluwarsa pada PRP dari Unit Transfusi Darah (UTD) PMI. Enam kantong PRP sebelum dan sesudah kadaluwarsa UTD PMI diberi perlakuan dengan aktivasi trombin dan cara lisis satu, dua dan tiga kali simpan beku (dibekukan pada -20

C
selama 30 menit dan dicairkan pada suhu ruang selama 15 menit). Kadar faktor pertumbuhan TGF-1, PDGF AB, EGF, IGF-1, VEGF diukur menggunakan Sigma ELISA Kit serta Hematology Anlyzer Sysmex XN-1000 untuk menghitung jumlah trombosit. Hasil penelitian menunjukkan jumlah trombosit semakin menurun secara perlahan dengan semakin banyak jumlah simpan beku. Kadar TGF-1 dan EGF tertinggi didapatkan pada perlakuan aktivasi trombin, PDGF AB dan IGF-1 pada tiga kali simpan beku dan VEGF pada satu kali simpan beku. Tidak terdapat pengaruh perlakuan simpan beku terhadap kadar faktor pertumbuhan kecuali perlakuan aktivasi trombin pada TGF-1 dan perlakuan simpan beku pada VEGF. Tidak ada pengaruh yang signifikan jumlah trombosit dan kadar faktor pertumbuhan dari PRP sebelum dan sesudah Kadaluwarsa dari PMI.
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ABSTRACT
Platelet Rich Plasma (PRP) known to be used to replace animal serum as a cell culture supplement media even though out dated up to three weeks. Various processing methods PRP before use, causing inconsistent results in cell culture. This is presumably because the levels of the growth factor and platelet counts in

PRP varied. This study aims to determine how the PRP processing that yields the highest levels of growth factors and growth factor levels determine relationships and platelet counts before and after out dated in PRP from Unit of Blood Transfusion PMI. Six bags of PRP before and after out dated from Unit of Blood Transfusion PMI were treated with thrombin activation and lysis method with one, two and three times freeze thaw (freeze 30 minutes in -20

C and thaw 15
minutes in room temperature). Levels of the growth factor TGF- 1, PDGF AB, EGF, IGF-1, VEGF were measured using ELISA Kit and Sigma Anlyzer Sysmex Hematology XN -1000 to calculate the number of platelets. The results show the platelets number decreases slowly with increasing numbers freeze thaw cycle. Levels of TGF-1 and EGF highest activation was found in the treatment of thrombin, PDGF AB and IGF-1 at the store three times cycle freeze thaw and VEGF in one cycle freeze thaw. There was no effect of treatment on the freeze thaw cycle and growth factor levels unless treatment thrombin activation on TGF-1 and VEGF treatment on the freeze thaw cycle. No significant effect of the platelets number and growth factors levels before and after out dated PRP from Unit of Blood Transfusion PMI;Platelet Rich Plasma (PRP) known to be used to replace animal serum as a cell
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