ABSTRAK

Afifuddin, Mokhammad. *Potensi keterla rambat (Ipomoea batatas) sebagai terapi nutrisi bagi pasien lupus eritematosus sistemik dengan meningkatkan ekspresi FoxP3 dan menginhibisi ekspresi IL-23R*. Tugas Akhir, Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Brawijaya Malang. Pembimbing: 1) Dr. dr Kusworini Handono, MKes, SpPK; 2) Dr.rer.nat. Tri Yudani Mardining Raras, MApp, Sc

Pasien LES mempunyai kadar vitamin A yang rendah, penurunan sel Tregulator dan peningkatan sel Th17 yang menyebabkan penurunan rasio sel Treg/sel Th17. Ketela rambat ungu (*Ipomoea batatas*) diketahui memiliki kandungan vitamin A yang tinggi sehingga mempunyai potensi dalam terapi pasien LES. Penelitian ini bertujuan untuk mengetahui efek pemberian ekstrak ketela rambat ungu terhadap diferensiasi sel T CD4 naif menjadi sel Th17 dan sel Treg pasien LES. Subjek penelitian adalah sel T CD4 naif pasien LES yang dikultur dalam medium RPMI 1640 yang diperkaya FBS10%, glutamine 2nM, penisilin 100IU/ml, streptomisin 0,1mg/ml. Sel dicampur dalam anti-CD3 (5µg/ml) dan anti-CD28 (5µg/ml). Kemudian sel distimulasi dengan IL-6 (10ng/ml), anti-IFN-γ (10µg/ml), dan anti-IL-4 (10µg/ml) dan ditambah ekstrak ketela rambat ungu dengan berbagai dosis ((P0= 0µg/ml [kontrol], P1=25µg/ml, P2=50µg/ml, and P3=100µg/ml). Persentase sel Treg (CD4+CD25+) dan sel Th17 (CD4+IL-23R+) diukur menggunakan flowcytometri. Dibanding dengan P0 (7,74±5,44)%, persentase sel Treg (CD4+CD25+) pada P1 (5.28±2.95)%, P2 (5.65±3.20)%, dan P3 (5.53±2.99)% cenderung lebih rendah walau tidak bermakna secara statistik. Persentase sel Th17 (CD4+IL-23R+) pada P1 (2.73±1.66)%, P2 (2.27±1.07)%, dan P3 (2.99±0.72)% tampak lebih rendah dari P1(9.3040±8.30)% namun tidak bermakna. Rasio sel Treg/sel Th17 pada P1 (2,19±0,30), P2 (2,66±0,43), dan P3 (1,95±0,78) terbukti lebih tinggi daripada P0 (1.04±0,44). Kesimpulan pemberian ketela rambat ungu tidak menurunkan diferensiasi sel T CD4 naif menjadi sel Treg dan sel Th17 serta meningkatkan rasio sel Treg/sel Th17.

Kata kunci: LES, sel Treg, sel Th17, ketela rambat ungu

ABSTRACT

Afifuddin, Mokhammad. *Potential of sweet potatoes (Ipomoea batatas) as nutritional therapy for systemic lupus erythematosus patients by increasing the expression of FoxP3 and inhibing the expression of IL-23R.* Final Assigment, Department of Medicine, Faculty of Medicine, University of Brawijaya Malang. Supervisor: 1) Dr. dr. Kusworini Handono, MKes, SpPK; 2) Dr.rer.nat Tri Yudani Mardining Raras, MApp, Sc

SLE patients have low vitamin A level, decreasing amount of T regulatory cells and increasing amount of Th17 cells, lead to low Treg cell/Th17 cell ratio. Purple sweet potatoes (*Ipomoea batatas)* are known to have high vitamin A, so they have potential possibility in the SLE treatment. The purpuse of this research is to determine the effect of purple sweet potato on naive CD4 T cells differentiation into Th17 cells and T reg cells in SLE patients. Subjects were naive CD4 + T cells from SLE patients were cultured in RPMI 1640 medium enriched 10% FBS, glutamine 2nm, 100IU/ml penicillin, and streptomycin 0.1 mg / ml. Cells were cultured and added to human plate-bound anti-CD3 antibody (5µg/ml) and anti-CD28 (5µg/ml). After this, we stimulated the cell cultures with IL-6 (10ng/ml), TGF-β1 (10ng/ml), anti-IFN-γ (10µg/ml) and anti-IL-4 (10µg/ml). Several doses of sweet potatoes crude extract (P0= 0µg/ml [control group], P1=25µg/ml, P2=50µg/ml, and P3=100µg/ml) were added. The percentage of Treg cells (CD4+CD25+) and Th17 cells (CD4+IL-23R+) were examined by flowcytometry. Compared with P0 (7,74±5.44) %, the percentage of Treg cells (CD4+CD25+) in P1 (5.28±2.95)%, P2 (5.65±3.20)%, and P3 (5.53±2.99)% were lower, however, statistically is not significant. The percentage of Th17cells (CD4+IL23R+) in P1 (2.73±1.66)%, P2 (2.27±1.07)%, and P3 (2.99±0.72)% were seemed lower than in P0 (9.3040±8.30) %, however not statistically significant. Compared with P0 (1.04±0,44)%, the ratio of Treg/Th17 was significantly higher in P1 (2,19±0,30), P2 (2,66±0,43) and P3 (1,95±0,78). We concluded that purple sweet potatoes administration do not decrease differentiation of naive CD4+ T cells into Treg and Th17 cells, and it can increase the ratio of Treg / Th17.

Keyword: SLE, Treg cell, Th17 cell, purple sweet potato