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Promoter Genetic Variants Of ELMO-1 rs rs13242914 as risk for Diabetic Kidney Diseases in Jambi Malayan Ethic, Indonesia.

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Objectives : This study was to revealed association of genetic variants of Engulfment and cell motility-1 (ELMO-1) gene with diabetic kidney diseases. In addition to supporting the functional of genetic variants we also measure association of genetic variant and ELMO-1 plasma level
Methods : Case control study design was performed with carefully matched of diabetic patients who was suffered DKD (n=43) as case group and who was not suffer DKD (n=31) as control group. Metabolic parameter was measured, DKD diagnose based on albumin creatinine ratio (ACR). ELMO-1 was measure with Enzyme link immune assay (ELISA). Genotyping was performed with Sanger Sequencing
Results : Proportion of CT and TT genotype of rs13242914 was higher than CC genotype and statistically significant. In contrary, Proportion subject with GT and TT genotype of rs1882071 and was lower in DKD than GG. Proportion subject with GG was higher and AG was lower of rs13242348 in DKD than AA genotype. Those difference not statistically significant. The three genetic variants not associated with plasma ELMO-1 level (p value 0,670; 0,594; 0,854, respectively).
Conclusions : Genetic variants rs13242914 located in ELMO-1 gene promoter associated with diabetic kidney diseases but the ELMO-1 plasma level not differ significantly.

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Table 1. Baseline subject characteristic

Variable	Nephropathy Diabetic (n=43)	T2DM without nephropathy (n=31)	p-value OR (95%CI)
Age	51.56 ± 7.39	50.06 ± 8.35	0.425[a]
Gender			0.425[b]
Male, n	19	11	
Female, n	24	20	
Fasting blood sugar levels	160.00 (76.00-277.00)	128.00 (92.00-218.00)	0.202
Blood sugar levels 2 hours after eating	236.46 ± 55.68	235.10 ± 84.01	0.643[a]
Systolic blood pressure	140.00 (110.00-170.00)	120 (90.00-160.00)	**<0.001**[c]
Diastolic blood pressure	80.00 (60-100)	80.00 (50.00-90.00)	**0.008**[c]
Plasma creatinine, mg/dL	1.37±0.88	0.84±0.36	**0.001**[a]
Urine creatinine	105.83±75.24	86.92±71.88	0.245[a]
Urine albumin	1044.63±2121.04	12.26±9.76	**<0.001**[a]
Albumin creatinine ratio,	203.77 (30.68-14403.00)	13.75 (0.00-28.44)	**<0.001**[c]
Glomerular filtration rate, mL/min	67.82±34.16	95.57±23.44	**<0.001**[a]

[a] student t-test, normally distributed after transformed Log 10; [b]chi square test; [c] student t-test.

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Table 2. Association of ELMO-1 genetic variant in promoter with diabetic nephropathy

Genotype	Nephropathy Diabetic (n=43)	T2DM without nephropathy (n=31)	p-value OR (95%CI)
rs1882071 G/T			
GG	26	17	ref
GT	15	10	0.970[a] 0.98 (0.36-2.68)
TT	2	4	0.206[b] 0.33 (0.05-1.99)
GT+TT	17	14	0.628[a] 0.79 (0.31-2.02)
rs13242914 C/T			
CC	2	7	ref
CT	24	15	0.038[b] 5.60 (1.02-30.61)
TT	17	9	0.031[b] 6.61 (1.13-38.70)
CT+TT	41	24	0.020[b] 5.80(1.15-31.14)
rs13242348 A/G			
AA	13	9	ref
AG	22	18	0.756[a] 0.85 (0.29-2.43)
GG	8	4	0.478 1.38 (0.32-6.03)