EXPRESSION OF THE CO-STIMULATORY RECEPTOR SLAMF-1 IN LYMPHOCYTES FROM PATIENTS WITH AUTOIMMUNE THYROIDITIS

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INTRODUCTION

Signalling lymphocytic activation molecule SLAMF1 (CD150) is a modulatory receptor expressed in most immune cells. Different data indicate that CD150 is involved in T cell cytokine production, NK cell and CD8 T cell mediated cytotoxicity, and T regulatory (Treg) cell activity.

Patients with autoimmune thyroid disease (AITD) show defects in their immune-regulatory mechanisms. Herein we assessed the expression and function CD150 in lymphocytes subpopulations from patients with AITD.

PATIENTS AND METHODS

We analyzed by multi-parametric flow cytometry and immunofluorescence techniques the expression of SLAMF1 in peripheral blood from 28 patients with autoimmune thyroid disease (AITD) and 21 controls, and thyroid tissue cell infiltrates from 5 patients. We also assessed the functional role of SLAMF1 in CD4+CD25+ Treg cells, using an assay of inhibition of cellular proliferation

RESULTS

Table 1:
General description of patients and controls

	Patients		Controls
	GD	HT	
n	17	11	21
Age (years)	48.9±11.9	45.6±16.1	48.6±13.7
Sex (n) Female/male	13/4	10/1	13/8
Ophtalmopathy Yes/no	12/5	0/11	
CAS			
CAS<2	13		
CAS≥2	5		
FT4 (ng/dL)[a]	2.06±1.64	1.19±0.36	
TSH (µU/ ml)[b]	3.93±6.17	8.20±5.99	
TPO-Ab (UI/ml)[c]	473.28±773.67	261.4±253.88	
Tg-Ab (UI/ml)[d]	194.22±219.22	269.0±341.23	
TSH-R (U/L)[e]	5.89±9.07	0.684±0.345	

Values are given as the mean ± SD. CAS: clinical activity score. a) FT4 free thyroxine 4, 0.93-1.70 ng/dL. b) TSH thyroid-stimulating hormone, 0.27-4.3 µU/ml. c) TPO-Ab thyroid peroxidase antibody, negative <100 UI/ml. d) Tg-Ab thyroglobulin antibody, negative <344 UI/ml. e) TSH-receptor antibody, negative <0.5 U/L

Figure 2: Expression of SLAMF1 in thyroid tissue of AITD patients. Mononuclear cells from five patients with AITD were isolated from both peripheral blood and thyroid tissue. A and B horizontal lines correspond to mean and standard deviation. *p<0.05, **p<0.01, ***p<0.005.

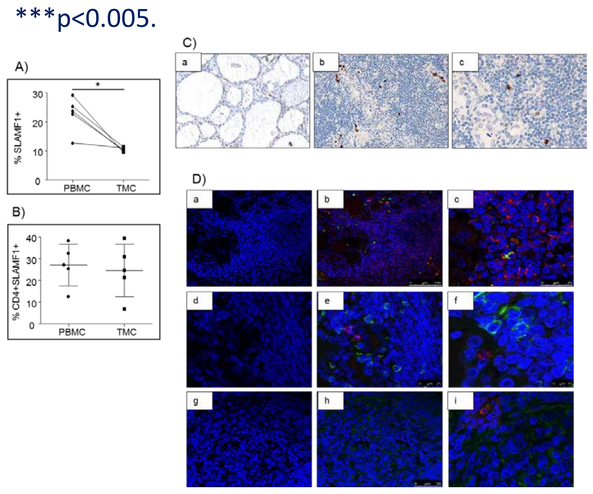


Figure 1: Expression of SLAMF1 in lymphocytes from patients with AITD. PBMC from 28 AITD patients and 21 controls were isolated and stained with mAbs directed against CD4, CD8, CD19, CD56, CD16, CD25, Foxp3, IL-17 and SLAMF1. B and E horizontal lines correspond to mean and standard deviation and A, C, D, F-H correspond the median and Q1-Q3. *p<0.05, **p<0.01, ***p<0.005.

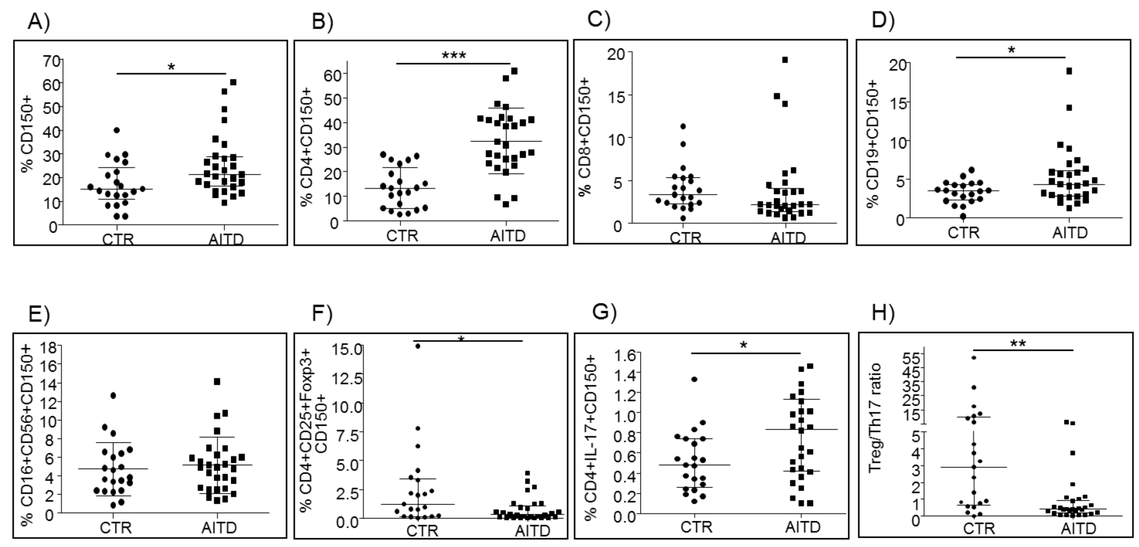
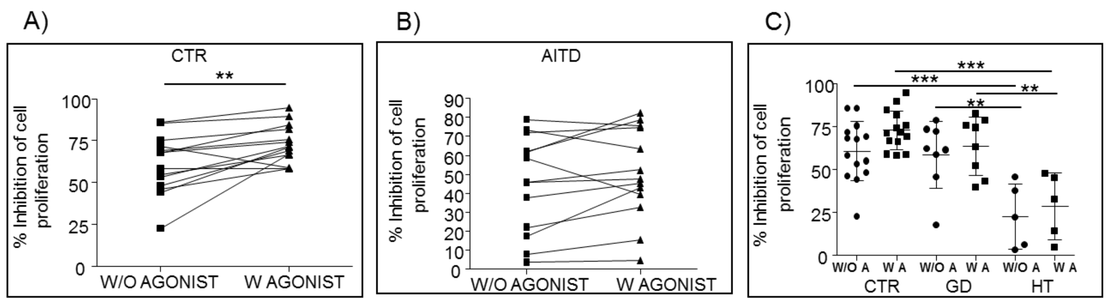


Figure 3: Suppressor function of CD25+ Treg cells in AITD patients. PBMC from 13 AITD patients (8 GD and 5 HT patients) and 14 healthy individuals were separated in CD25+ and CD25-, co-cultured, and added CFSE for 5 days. Then, cell proliferation was assessed by flow cytometry. C horizontal lines correspond to mean and standard deviation. *p<0.05, **p<0.01, ***p<0.005.



CONCLUSIONS

The altered pattern of expression and the functional alteration of SLAMF1 found in patients with AITD suggests that SLAMF1 could be involved in the pathogenesis of AITD.

Keywords: SLAMF1, CD150, Autoimmune Thyroiditis, Graves' Disease, Hashimotos' Thyroiditis.

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