**Supplemental Figure Legends**

**Supplemental Figure 1**

Frontal (left) and sagittal (right) sections of pituitary MRI (T1WI) scans of case 1 (A), case 2 (B), and case 3 (C) (4X). In case1, the pituitary was slightly atrophic. However, no major abnormalities were observed in the pituitary of these patients. Arrows indicate the pituitary gland.

**Supplemental Figure 2**

The patients' sera were used as a primary antibody (1:500). As in Figure 1A-C, the bands corresponding to PIT-1 are indicated with an arrow. In contrast, no band corresponding to PIT-1 was observed in the control in Figure 2D. The molecular weight of GH, $\alpha$-enolase, Tg, TPO, GAD, insulin, and 21OHase is 22kD, 47kD, 300kD, 12kD, 65kD, 58kD, and 50kD, respectively. Bands of such molecular weight were not detected.

**Supplemental Figure 3**

(A) A 33-kD-band was specifically detected in the lysates from hPIT1-transfected Cos7 cells, GH3 cells and MtT/s cells as well as in extracts of the rat anterior pituitary. This band was not detected in the cell lysates from 293T cells, Cos7 cells transfected with the empty vector and AtT20 cells, cells of a corticotroph cell line, or in extracts of the rat posterior pituitary (upper panel). Immunoblotting using an anti-PIT-1 monoclonal antibody revealed an identical pattern to that observed when the patient 1's serum (middle panel). Representative results of healthy control subject are shown (lower panel). Neither the sera of 10 healthy control subjects, nor those of 8 patients with pituitary adenoma (3 non-functioning tumor, 3 acromegaly, and 2 prolactinoma) and 6 patients with hypophysitis recognized the PIT-1 protein on immunoblotting. (B) We produced recombinant proteins corresponding to the full length, the POU domain and the transactivation (TA) domain of human PIT-1 in *Echerichia coli*. The patient's serum detected these domains, suggesting that the epitopes are widely distributed over the PIT-1 molecule. (C) An antigen absorption test using recombinant human PIT-1 (rhPIT-1). When the patients' sera were pre-incubated with rhPIT-1, the signal intensity of the band corresponding to PIT-1 was substantially diminished. The patients' sera did not recognize other transcriptional factors such as PROP1, glucocorticoid receptors and estrogen receptors (data not shown). (D) The IgG fraction was purified from the patients' sera and used as a primary antibody. The

anti-PIT1 antibody is of the IgG isotype. (E) Anti-PIT1 antibody-specific ELISA. In contrast to the patients' sera (patients 1-3), the sera from patients with hypophysitis, pituitary adenoma, APS-II, and control subjects did not show a presence of anti-PIT-1 antibody. H; Hypophysitis, P; Pitutary adenoma, C; Craniopharyngioma, S; Sheehan syndrome, E; Empty sella syndrome, I; Isolated ACTH deficiency, D; type 1 diabetes, T; Autoimmune thyroid disease, A; APS-II, Ad; Addison's disease, In; insulin antibody syndrome, C; Control subjects, and B; blank.

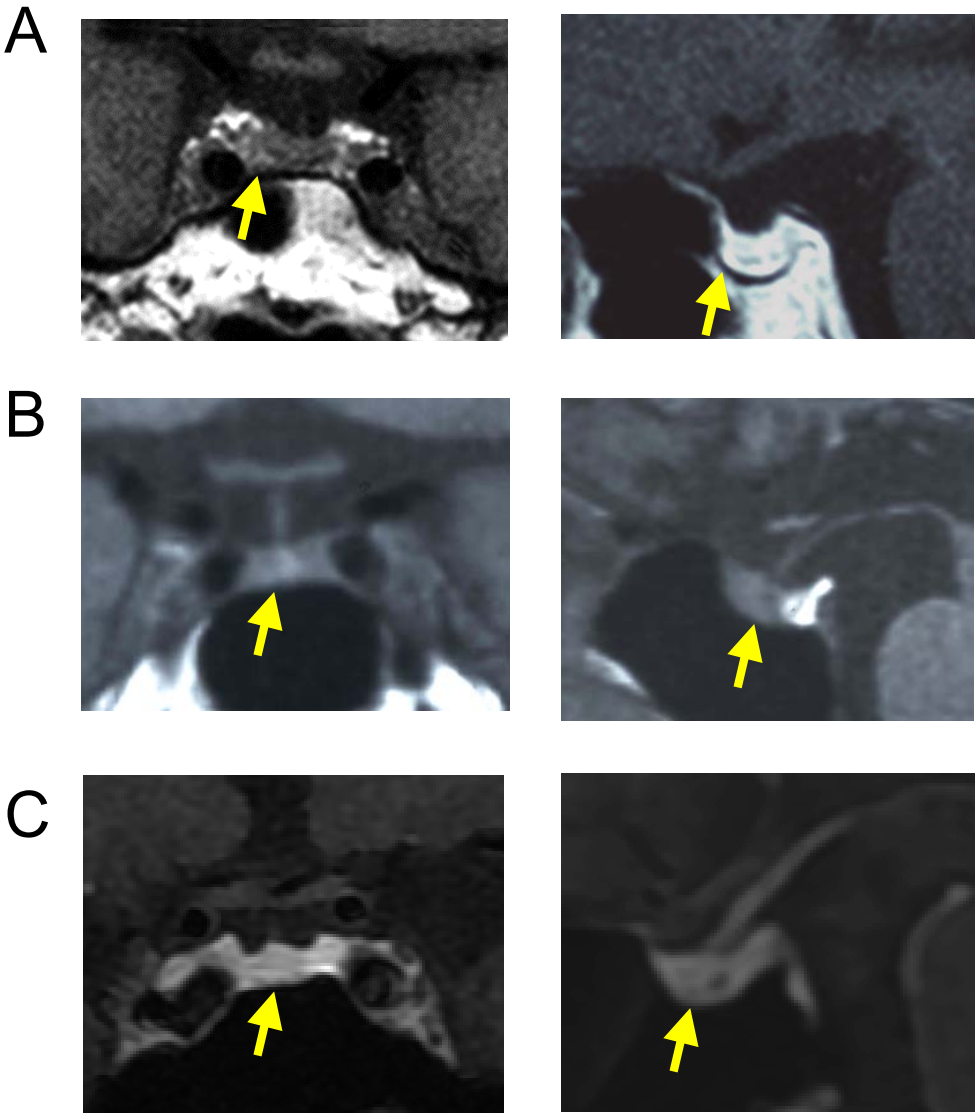
**Supplemental Figure 4**

(A) Azan staining of the pancreas from patient 2 reveals enhanced fibrosis. (B) Immunohistochemical analysis using lymphocyte surface markers reveals infiltrations of B cells ($CD20^+$), T cells ($CD3^+$), helper T cells ($CD4^+$), and cytotoxic T cells ($CD8^+$) in the pancreas.

Supplemental Table 1

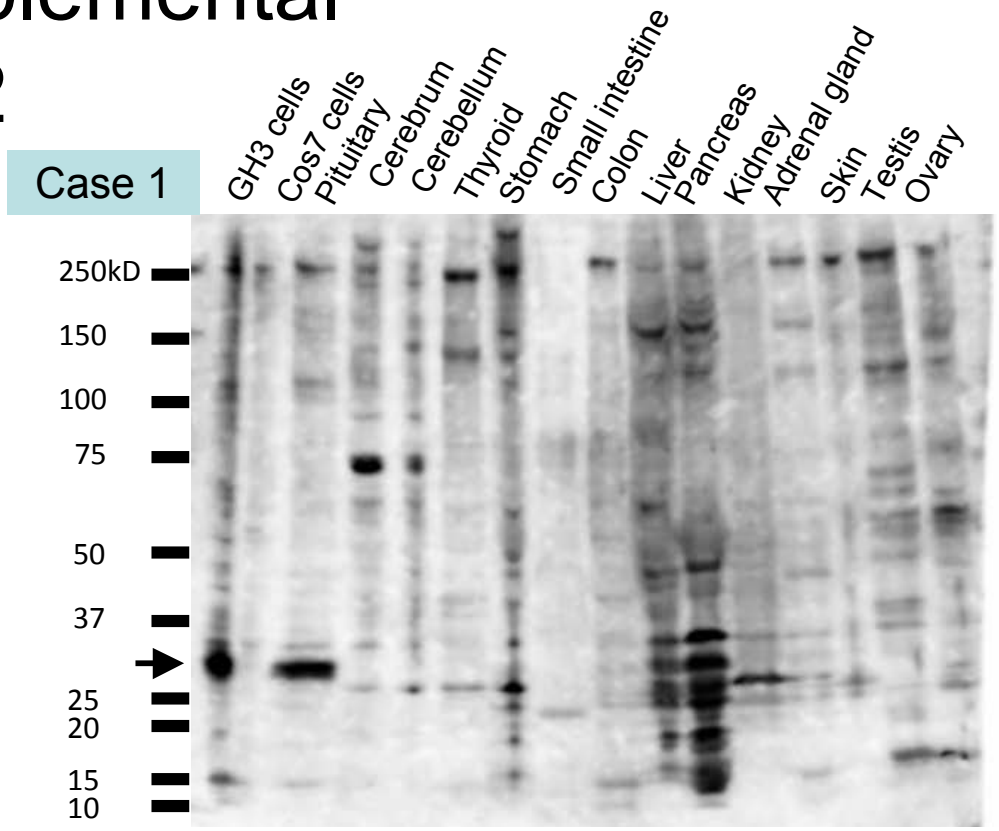
| | | M | F | Total |
|---|---|---|---|---|
| Hypophysitis | | 2 | 5 | 7 |
| Pituitary tumor | | 7 | 9 | 16 |
| | Acromegaly | 2 | 5 | |
| | Prolactinoma | 2 | 0 | |
| | TSH producing tumor | 2 | 0 | |
| | Cushing disease | 0 | 1 | |
| | NFPA | 0 | 1 | |
| | Craniopharyngioma | 1 | 2 | |
| Sheehan syndrome | | 0 | 1 | 1 |
| Empty sella | | 2 | 0 | 2 |
| Isolated ACTH deficiency | | 1 | 0 | 1 |
| Type1 diabetes | | 1 | 4 | 5 |
| Autoimmune thyroid disease | | 1 | 4 | 5 |
| | Basedow's disease | 1 | 3 | |
| | Hashimoto's thyroiditis | 0 | 1 | |
| Addison's disease | | 1 | 0 | 1 |
| Anti-insulin antibody syndrome | | 1 | 0 | 1 |
| APS-II | | 2 | 4 | 6 |
| | Type1 diabetes+primary hypogonadism | 1 | 0 | |
| | Type1 diabetes+ Hashimoto's thyroiditis | 0 | 1 | |
| | Type1 diabetes+ hypophysitis | 0 | 1 | |
| | Hypophysitis+pustulosis palmaris et plantaris | 0 | 1 | |
| | Hashimoto's thyroiditis+autoimmune pancreatitis | 1 | 0 | |
| | Hashimoto's thyroiditis+SLE | 0 | 1 | |
| Systemic lupus erythematosus | | 0 | 13 | 13 |
| Rheumatoid Arthritis | | 2 | 13 | 15 |
| Sjögren syndrome | | 0 | 3 | 3 |
| Systemic sclerosis | | 1 | 2 | 3 |
| Dermatomyositis | | 1 | 2 | 3 |
| Polymyositis | | 2 | 2 | 4 |
| Control subject | | 96 | 94 | 190 |

# Supplemental Fig.1

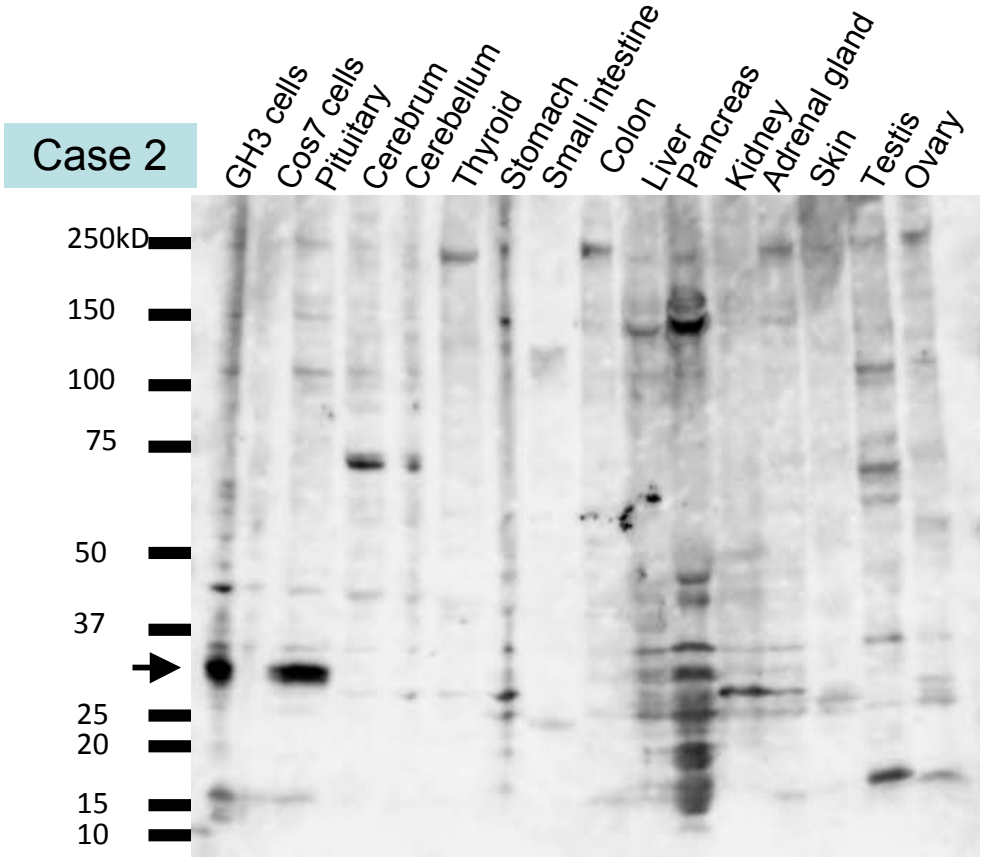


# Supplemental Fig.2

A

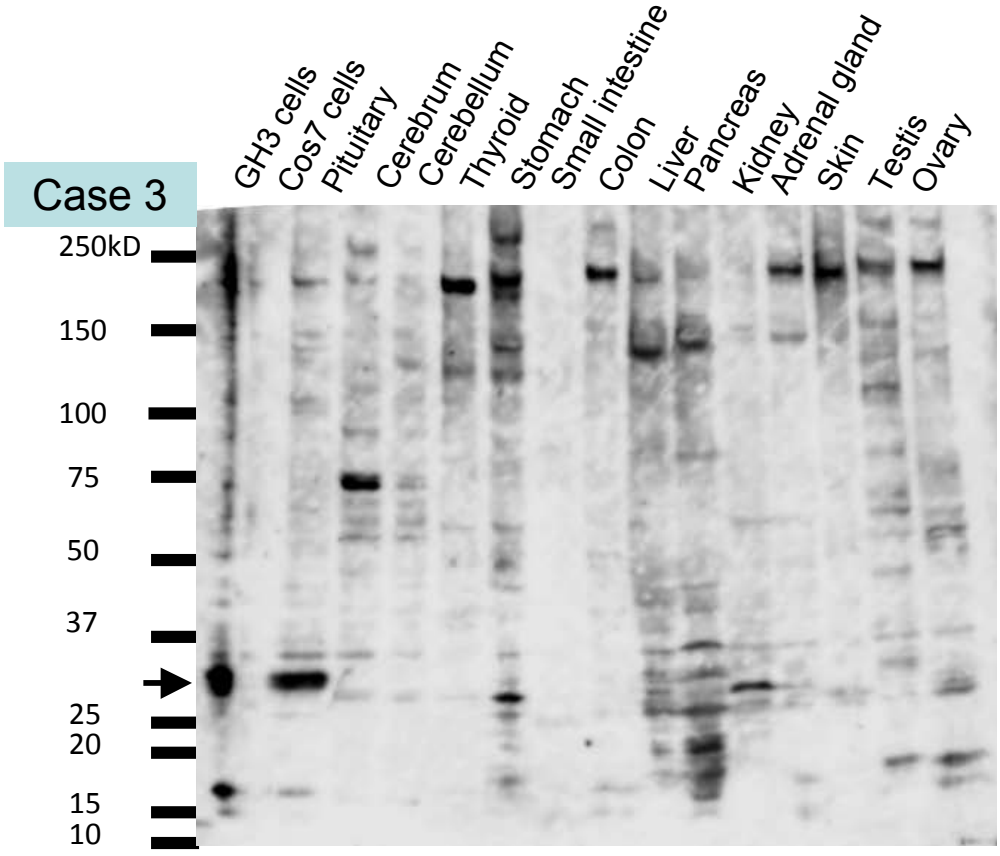



B



# Supplemental Fig.2

C

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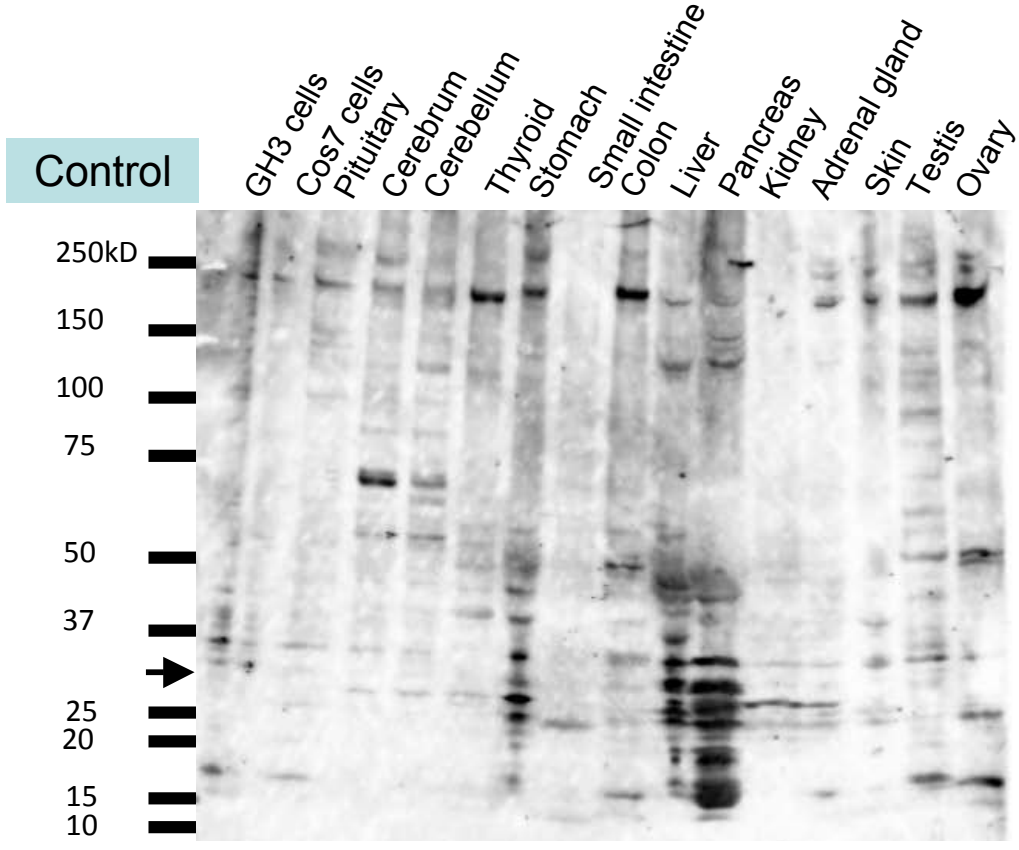

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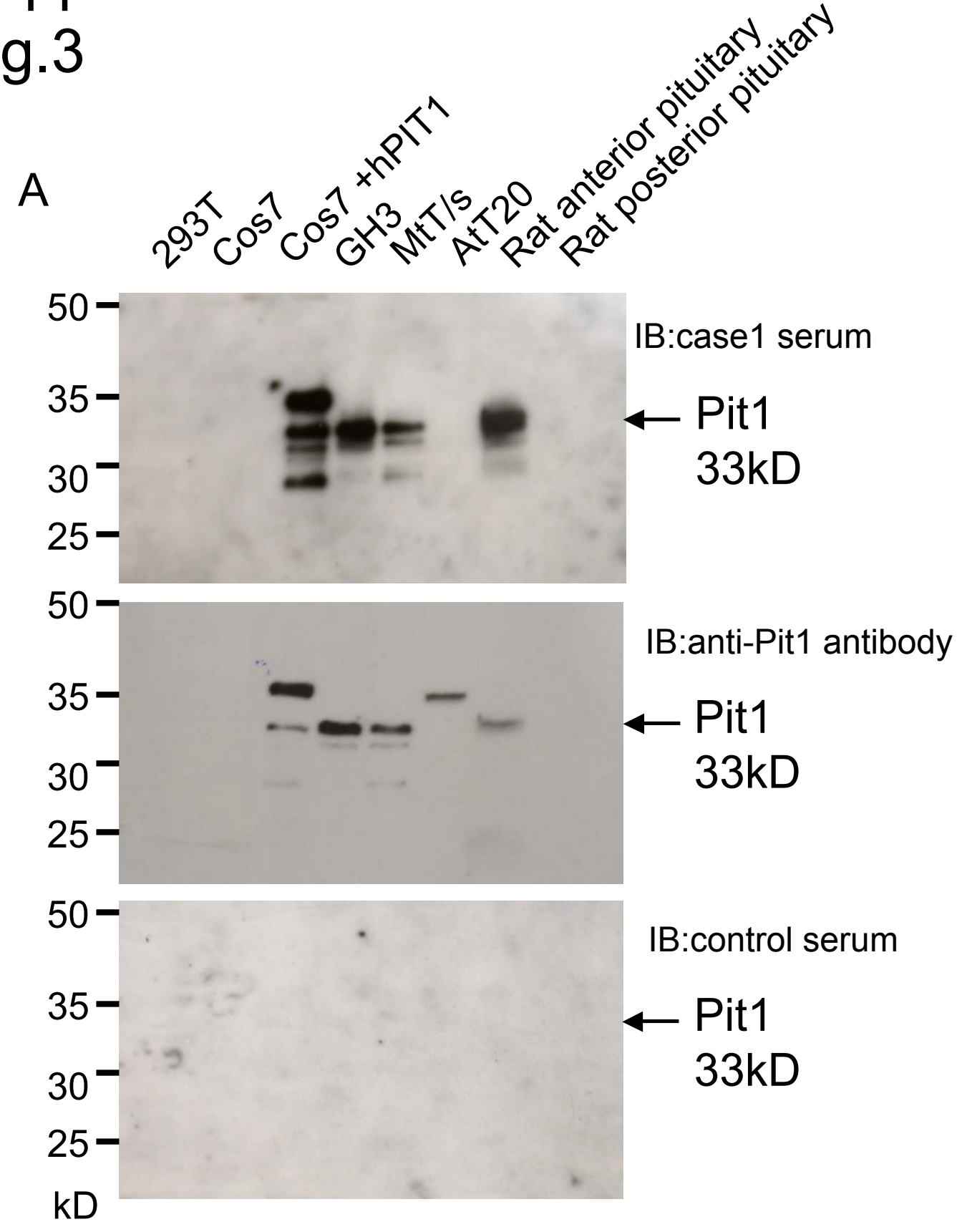

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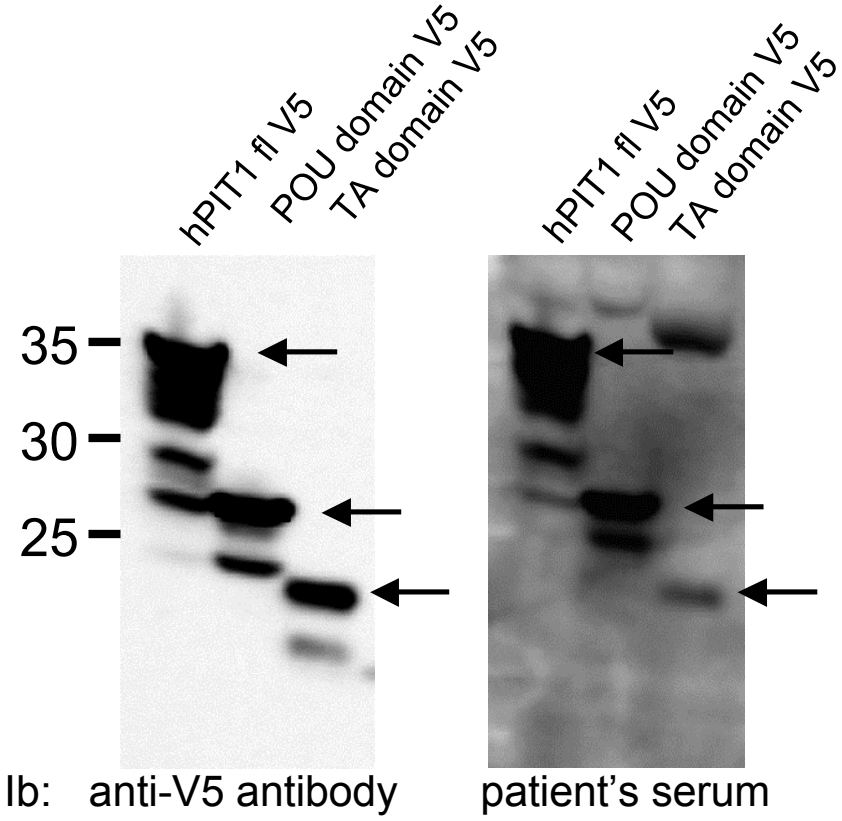


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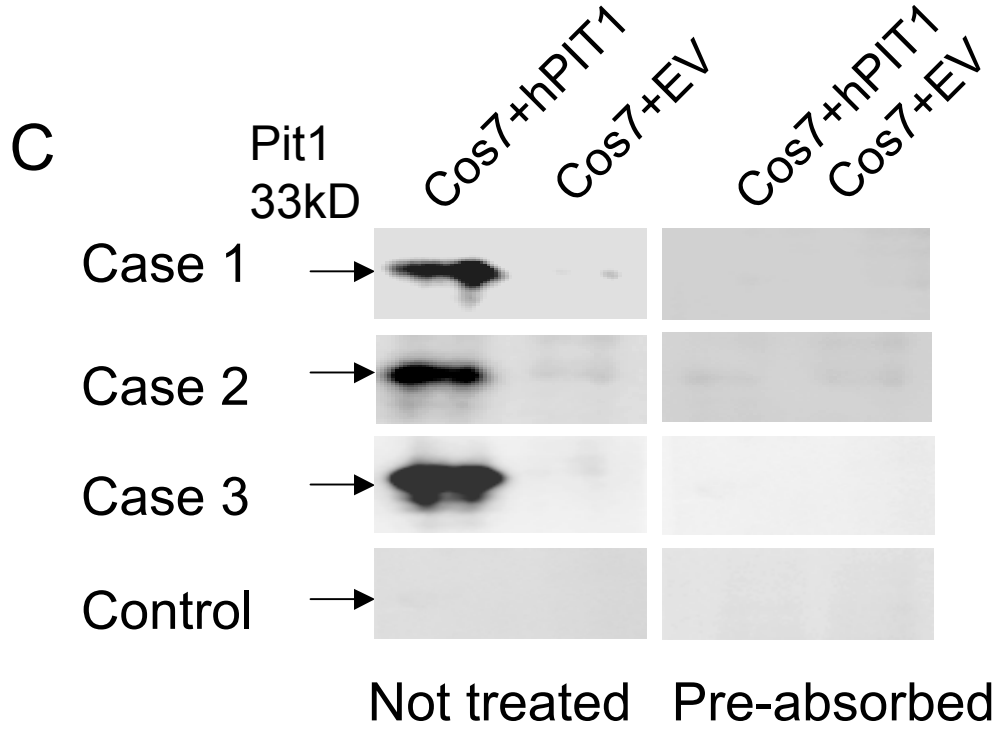
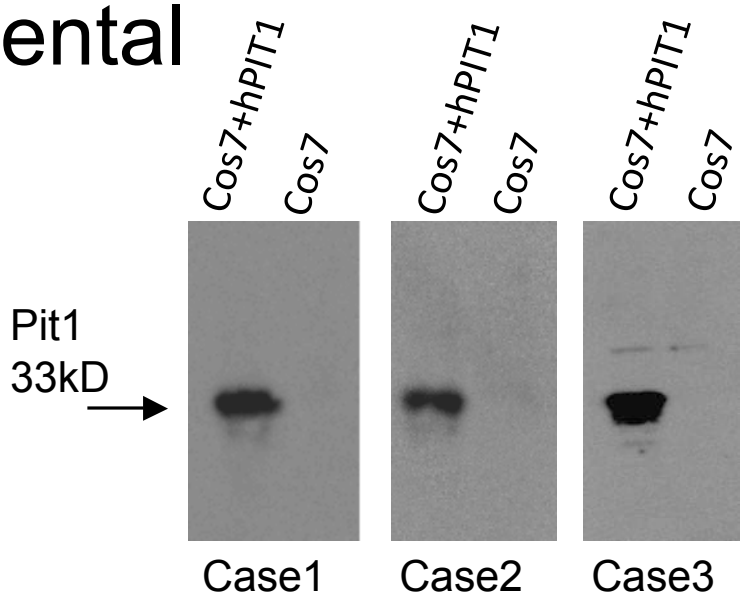


# Supplemental Fig.3

D

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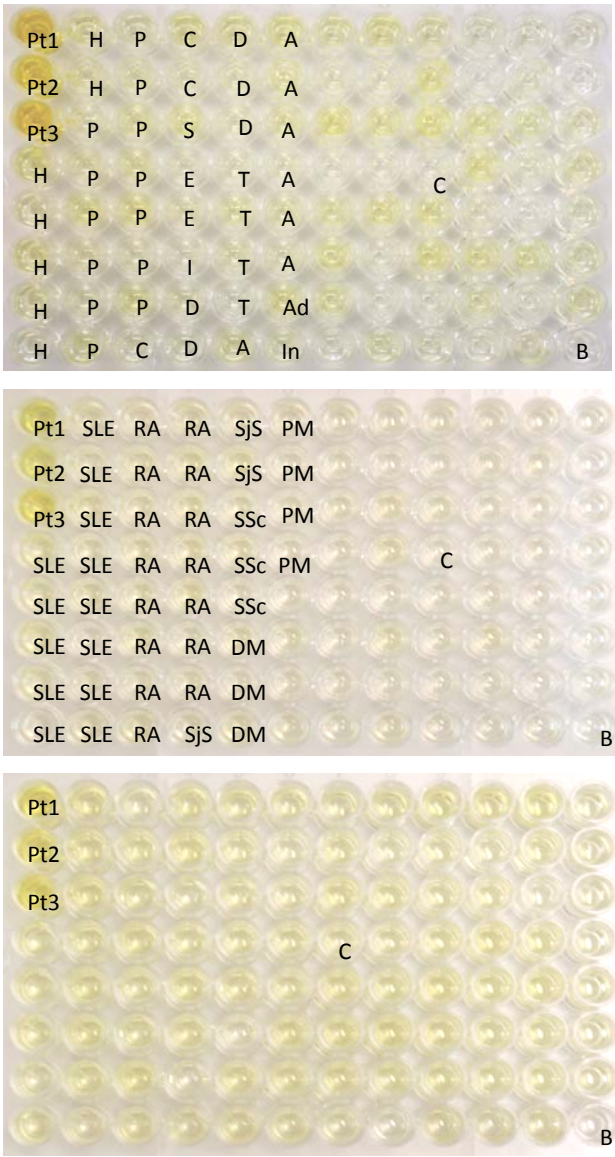
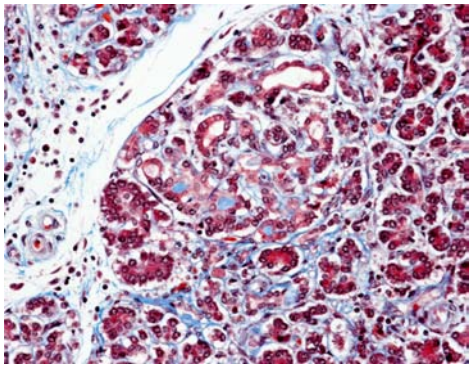


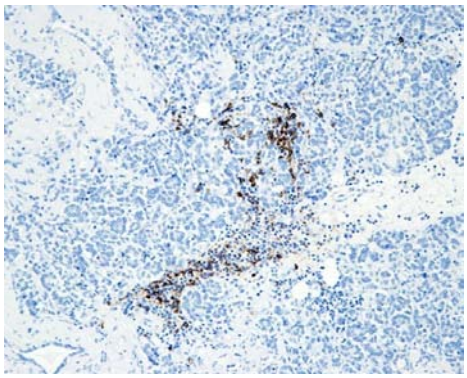
# Supplemental Fig.4

A



B

CD20



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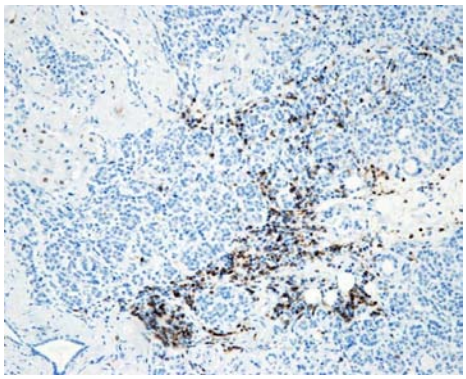

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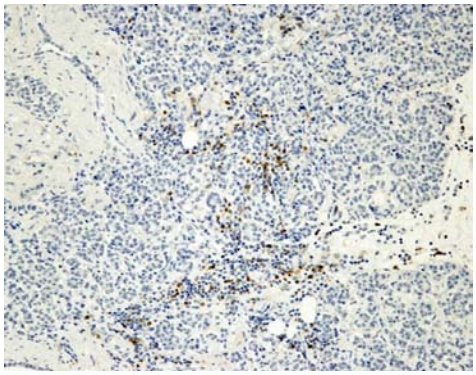

CD8