

- 1 Table S1. Correlation between immunotherapy effectiveness and positivity for one or more anti-mouse
 2 cerebellar tissue-derived antigen antibody test or the anti-GAD antibody test.

| Positive criteria: Anti-GAD antibodies detected or the <u>anti-mouse cerebellar tissue-derived antigen antibody</u> test score exceeded the reference score. | | | | Effect of immunotherapy | | Total | Fisher's exact test |
|---|-------|------------|------------|-------------------------|-----------|--------|---------------------|
| | | | | Ineffective | Effective | | |
| Reference score | 1 | Negative | Frequency | 1 | 1 | 2 | p=0.490 |
| | | | Percentage | 50.0% | 50.0% | 100.0% | |
| | | Positive | Frequency | 6 | 17 | 23 | |
| | | | Percentage | 26.1% | 73.9% | 100.0% | |
| | 2 | Negative | Frequency | 7 | 3 | 10 | p<0.001 |
| | | | Percentage | 63.6% | 36.4% | 100.0% | |
| | | Positive | Frequency | 0 | 15 | 15 | |
| | | | Percentage | 0.0% | 100.0% | 100.0% | |
| | 3 | Negative | Frequency | 7 | 7 | 14 | p=0.008 |
| | | | Percentage | 50.0% | 50.0% | 100.0% | |
| | | Positive | Frequency | 0 | 11 | 11 | |
| | | | Percentage | 0.0% | 100.0% | 100.0% | |
| | 4 | Negative | Frequency | 7 | 7 | 14 | p=0.008 |
| | | | Percentage | 50.0% | 50.0% | 100.0% | |
| | | Positive | Frequency | 0 | 11 | 11 | |
| | | | Percentage | 0.0% | 100.0% | 100.0% | |
| | 5 | Negative | Frequency | 7 | 8 | 15 | p=0.020 |
| | | | Percentage | 44.4% | 55.6% | 100.0% | |
| | | Positive | Frequency | 0 | 10 | 10 | |
| | | | Percentage | 0.0% | 100.0% | 100.0% | |
| | Total | Frequency | 7 | 18 | 25 | | |
| | | Percentage | 28.0% | 72.0% | 100.0% | | |

- 3 GAD: glutamic acid decarboxylase

4 Table S2. Correlation between immunotherapy effectiveness and positivity of one or more anti-mouse
5 cerebellar tissue-derived antigen antibody test or the anti-gliadin antibody (IgA class) test.

| Positive criteria: Anti-gliadin antibody (IgA class) detected or the <u>anti-mouse cerebellar tissue-derived</u> <u>antigen antibody</u> test score exceeded the reference score. | | | | Effect of immunotherapy | | Total | Fisher's exact test |
|---|-------|------------|------------|-------------------------|-----------|--------|------------------------|
| | | | | Ineffective | Effective | | |
| Reference score | 1 | Negative | Frequency | 1 | 0 | 1 | p=0.280 |
| | | | Percentage | 100.0% | 0.0% | 100.0% | |
| | | Positive | Frequency | 6 | 18 | 24 | |
| | | | Percentage | 25.0% | 75.0% | 100.0% | |
| | 2 | Negative | Frequency | 6 | 2 | 8 | p=0.001 |
| | | | Percentage | 75.0% | 25.0% | 100.0% | |
| | | Positive | Frequency | 1 | 16 | 17 | |
| | | | Percentage | 5.9% | 94.1% | 100.0% | |
| | 3 | Negative | Frequency | 6 | 4 | 10 | p=0.007 |
| | | | Percentage | 60.0% | 40.0% | 100.0% | |
| | | Positive | Frequency | 1 | 14 | 15 | |
| | | | Percentage | 6.7% | 93.3% | 100.0% | |
| | 4 | Negative | Frequency | 6 | 4 | 10 | p=0.007 |
| | | | Percentage | 60.0% | 40.0% | 100.0% | |
| | | Positive | Frequency | 1 | 14 | 15 | |
| | | | Percentage | 6.7% | 93.3% | 100.0% | |
| | 5 | Negative | Frequency | 6 | 5 | 11 | p=0.021 |
| | | | Percentage | 54.6% | 45.5% | 100.0% | |
| | | Positive | Frequency | 1 | 13 | 14 | |
| | | | Percentage | 7.1% | 92.9% | 100.0% | |
| | Total | Frequency | 7 | 18 | 25 | | |
| | | Percentage | 28.0% | 72.0% | 100.0% | | |

7 Table S3. Correlation between immunotherapy effectiveness and positivity of one or more anti-mouse
8 cerebellar tissue-derived antigen antibody test or the anti-TG6 antibody (IgA class) test.

| Positive criteria: Anti-TG6 antibody (IgA class) detected or the <u>anti-mouse cerebellar tissue-derived</u> <u>antigen antibody</u> test score exceeded the reference score. | | | | Effect of immunotherapy | | Total | Fisher's exact test |
|---|-------|------------|------------|-------------------------|-----------|--------|------------------------|
| | | | | Ineffective | Effective | | |
| Reference score | 1 | Negative | Frequency | 1 | 1 | 2 | p=0.490 |
| | | | Percentage | 50.0% | 50.0% | 100.0% | |
| | | Positive | Frequency | 6 | 17 | 23 | |
| | | | Percentage | 26.1% | 73.9% | 100.0% | |
| | 2 | Negative | Frequency | 6 | 4 | 10 | p=0.007 |
| | | | Percentage | 60.0% | 40.0% | 100.0% | |
| | | Positive | Frequency | 1 | 14 | 15 | |
| | | | Percentage | 6.7% | 93.3% | 100.0% | |
| | 3 | Negative | Frequency | 6 | 7 | 13 | p=0.073 |
| | | | Percentage | 46.2% | 53.9% | 100.0% | |
| | | Positive | Frequency | 1 | 11 | 12 | |
| | | | Percentage | 8.3% | 91.7% | 100.0% | |
| | 4 | Negative | Frequency | 6 | 7 | 13 | p=0.073 |
| | | | Percentage | 46.2% | 53.9% | 100.0% | |
| | | Positive | Frequency | 1 | 11 | 12 | |
| | | | Percentage | 8.3% | 91.7% | 100.0% | |
| | 5 | Negative | Frequency | 6 | 8 | 14 | p=0.090 |
| | | | Percentage | 42.9% | 57.1% | 100.0% | |
| | | Positive | Frequency | 1 | 10 | 11 | |
| | | | Percentage | 9.1% | 90.9% | 100.0% | |
| | Total | Frequency | 7 | 18 | 25 | | |
| | | Percentage | 28.0% | 72.0% | 100.0% | | |

9 TG6: transglutaminase 6

Table S4. Correlation between immunotherapy effectiveness and positivity of one or more anti-mouse cerebellar tissue-derived antigen antibody test, the anti-GAD antibody test, or the anti-gliadin antibody (IgA class) test.

| Positive criteria: | | | | Effect of immunotherapy | | Total | Fisher's exact test |
|--|---|----------|------------|-------------------------|-----------|--------|---------------------|
| Anti-GAD antibody or anti-gliadin antibody (IgA class) detected or the <u>anti-mouse cerebellar tissue-derived antigen antibody</u> test score exceeded the reference score. | | | | Ineffective | Effective | | |
| Reference score | 1 | Negative | Frequency | 1 | 0 | 1 | p=0.280 |
| | | | Percentage | 100.0% | 0.0% | 100.0% | |
| | | Positive | Frequency | 6 | 18 | 24 | |
| | | | Percentage | 25.0% | 75.0% | 100.0% | |
| | 2 | Negative | Frequency | 6 | 1 | 7 | p<0.001 |
| | | | Percentage | 75.0% | 25.0% | 100.0% | |
| | | Positive | Frequency | 1 | 17 | 18 | |
| | | | Percentage | 5.6% | 94.4% | 100.0% | |
| | 3 | Negative | Frequency | 6 | 3 | 9 | p=0.003 |
| | | | Percentage | 66.7% | 33.3% | 100.0% | |
| | | Positive | Frequency | 1 | 15 | 16 | |
| | | | Percentage | 6.3% | 93.8% | 100.0% | |
| | 4 | Negative | Frequency | 6 | 3 | 9 | p=0.003 |
| | | | Percentage | 66.7% | 33.3% | 100.0% | |
| | | Positive | Frequency | 1 | 15 | 16 | |
| | | | Percentage | 6.3% | 93.8% | 100.0% | |
| | 5 | Negative | Frequency | 6 | 4 | 10 | p=0.007 |
| | | | Percentage | 60.0% | 40.0% | 100.0% | |
| | | Positive | Frequency | 1 | 14 | 15 | |
| | | | Percentage | 6.7% | 93.3% | 100.0% | |
| | | Total | Frequency | 7 | 18 | 25 | |
| | | | Percentage | 28.0% | 72.0% | 100.0% | |

GAD: glutamic acid decarboxylase

Table S5. Correlation between immunotherapy effectiveness and positivity of one or more anti-mouse cerebellar tissue-derived antigen antibody test, the anti-GAD antibody test, or the anti-gliadin antibody (IgG class) test.

| Positive criteria: Anti-GAD antibody or anti-gliadin antibody (IgG class) detected or the <u>anti-mouse cerebellar tissue-derived antigen antibody</u> test score exceeded the reference score. | | | | Effect of immunotherapy | | Total | Fisher’s exact test |
|--|-------|------------|------------|-------------------------|-----------|--------|------------------------|
| | | | | Ineffective | Effective | | |
| Reference score | 1 | Negative | Frequency | 0 | 0 | 0 | - |
| | | | Percentage | - | - | - | |
| | | Positive | Frequency | 7 | 18 | 25 | |
| | | | Percentage | 28.0% | 72.0% | 100.0% | |
| | 2 | Negative | Frequency | 4 | 2 | 6 | p=0.032 |
| | | | Percentage | 66.7% | 33.3% | 100.0% | |
| | | Positive | Frequency | 3 | 16 | 19 | |
| | | | Percentage | 15.8% | 84.2% | 100.0% | |
| | 3 | Negative | Frequency | 4 | 6 | 10 | p=0.378 |
| | | | Percentage | 40.0% | 60.0% | 100.0% | |
| | | Positive | Frequency | 3 | 12 | 15 | |
| | | | Percentage | 20.0% | 80.0% | 100.0% | |
| | 4 | Negative | Frequency | 4 | 6 | 10 | p=0.378 |
| | | | Percentage | 40.0% | 60.0% | 100.0% | |
| | | Positive | Frequency | 3 | 12 | 15 | |
| | | | Percentage | 20.0% | 80.0% | 100.0% | |
| | 5 | Negative | Frequency | 4 | 7 | 11 | p=0.656 |
| | | | Percentage | 33.4% | 63.6% | 100.0% | |
| | | Positive | Frequency | 3 | 11 | 14 | |
| | | | Percentage | 21.4% | 78.6% | 100.0% | |
| | Total | Frequency | 7 | 18 | 25 | | |
| | | Percentage | 28.0% | 72.0% | 100.0% | | |

GAD: glutamic acid decarboxylase

21 Table S6. Correlation between immunotherapy effectiveness and positivity of one or more anti-mouse
 22 cerebellar tissue-derived antigen antibody test, the anti-GAD antibody test, or the anti-TG6 antibody
 23 (IgA class) test.

| Positive criteria: Anti-GAD antibody or anti-TG6 antibody (IgA class) detected or the <u>anti-mouse</u> <u>cerebellar tissue-derived antigen antibody</u> test score exceeded the reference score. | | | | Effect of immunotherapy | | Total | Fisher's exact test |
|--|---|----------|------------|-------------------------|-----------|--------|------------------------|
| | | | | Ineffective | Effective | | |
| Reference score | 1 | Negative | Frequency | 1 | 1 | 2 | p=0.490 |
| | | | Percentage | 50.0% | 50.0% | 100.0% | |
| | | Positive | Frequency | 6 | 17 | 23 | |
| | | | Percentage | 26.1% | 73.9% | 100.0% | |
| | 2 | Negative | Frequency | 6 | 3 | 9 | p=0.029 |
| | | | Percentage | 66.7% | 33.3% | 100.0% | |
| | | Positive | Frequency | 1 | 15 | 16 | |
| | | | Percentage | 6.3% | 93.8% | 100.0% | |
| | 3 | Negative | Frequency | 6 | 6 | 12 | p=0.030 |
| | | | Percentage | 50.0% | 50.0% | 100.0% | |
| | | Positive | Frequency | 1 | 12 | 13 | |
| | | | Percentage | 7.7% | 92.3% | 100.0% | |
| | 4 | Negative | Frequency | 6 | 6 | 12 | p=0.030 |
| | | | Percentage | 50.0% | 50.0% | 100.0% | |
| | | Positive | Frequency | 1 | 12 | 13 | |
| | | | Percentage | 7.7% | 92.3% | 100.0% | |
| | 5 | Negative | Frequency | 6 | 7 | 13 | p=0.073 |
| | | | Percentage | 46.2% | 53.9% | 100.0% | |
| | | Positive | Frequency | 1 | 11 | 12 | |
| | | | Percentage | 9.3% | 91.7% | 100.0% | |
| | | Total | Frequency | 7 | 18 | 25 | |
| | | | Percentage | 28.0% | 72.0% | 100.0% | |

24 GAD: glutamic acid decarboxylase, TG6: transglutaminase 6

25 Table S7. Correlation between anti-mouse cerebellar tissue-derived antigen antibody test and each
 26 antibody test.

| Inspection item | Judgement | <u>Anti-mouse cerebellar tissue-derived antigen antibody</u> test | | Fisher's exact test |
|-----------------------------------|-----------|---|----------|---------------------|
| | | Negative | Positive | |
| Anti-thyroid antibody | Negative | 7 | 5 | p=0.238 |
| | Positive | 4 | 9 | |
| Anti-GAD antibody | Negative | 10 | 12 | p=1.000 |
| | Positive | 1 | 2 | |
| Anti-gliadin antibody (IgA class) | Negative | 8 | 8 | p=0.677 |
| | Positive | 3 | 6 | |
| Anti-gliadin antibody (IgG class) | Negative | 7 | 14 | p=0.261 |
| | Positive | 4 | 0 | |
| Anti-TG6 antibody (IgA class) | Negative | 10 | 13 | p=1.000 |
| | Positive | 1 | 1 | |
| Anti-TG6 antibody (IgG class) | Negative | 11 | 14 | - |
| | Positive | 0 | 0 | |

27 GAD: glutamic acid decarboxylase, TG6: transglutaminase 6

28 Positive criteria for anti-mouse cerebellar tissue-derived antigen antibody test: reference score ≥ 2 .