SUPPLEMENTARY DATA

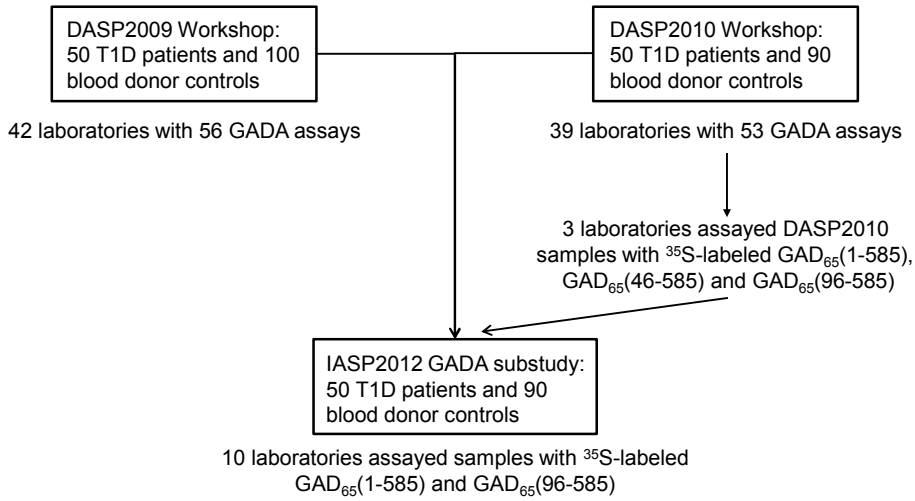
**Supplementary Table 1.** Characteristics of cases with newly-diagnosed type 1 diabetes and healthy controls included in DASP2009, DASP2010 and IASP2012 workshops.

| Cohort | n | Male | Age (range) | Ethnicity* | | |
|---|---|---|---|---|---|---|
| | | | | White | Black | Hispanic |
| DASP2009 Cases | 50 | 33 | 24.5 yrs (10-32 yrs) | 40 | 1 | 8 |
| DASP2009 Controls | 100 | 50 | 20 yrs (18-30 yrs) | 80 | 20 | 0 |
| DASP2010 Cases | 50 | 22 | 21.5 yrs (6-50 yrs) | 46 | 1 | 1 |
| DASP2010 Controls | 90 | 48 | 20 yrs (18-30 yrs) | 71 | 19 | 0 |
| IASP2012 Cases | 50 | 28 | 15 yrs (9-37 yrs) | 43 | 6 | 1 |
| IASP2012 Controls | 90 | 45 | 20 yrs (18-30 yrs) | 71 | 19 | 0 |

*One DASP 2009 case was Asian and two DASP2010 cases were of unknown ethnicity

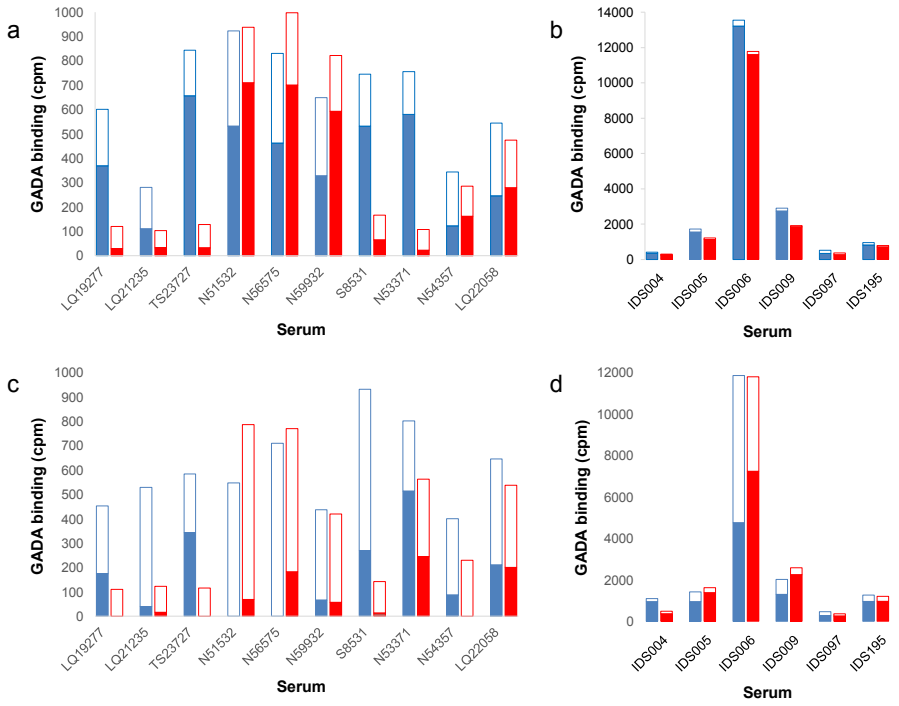
SUPPLEMENTARY DATA

**Supplementary Figure 1.** A flow diagram showing the study design; Analysis of GADA assays participating in the DASP2010 and DASP2009 workshops identified systematic differences in the positivity of control samples according to assay type. Some of these differences were ascribed to altered recognition of epitopes in the N-terminal of GAD65. Three laboratories using radiobinding assays therefore tested two N-terminally truncated GAD constructs to determine whether they could improve assay performance. Ten laboratories then evaluated the performance of GADA assays using either 35S-labeled full-length GAD65(1-585) or N-terminally truncated GAD65(96-585) in the IASP2012 GADA substudy.



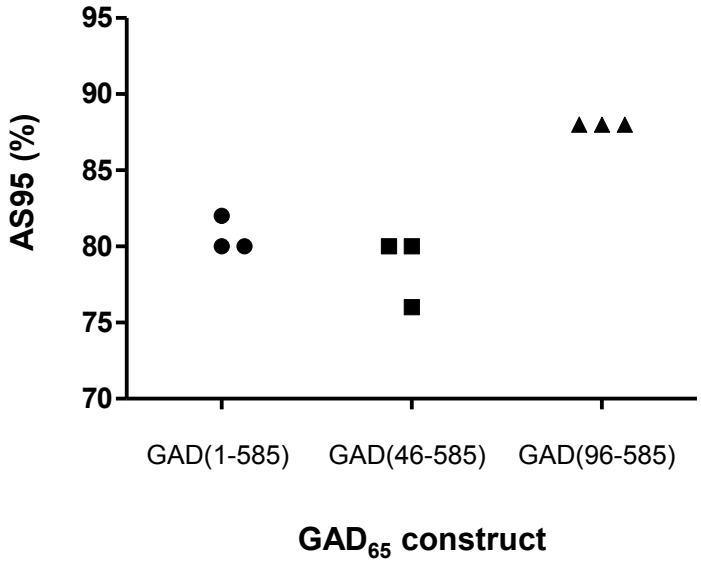
SUPPLEMENTARY DATA

**Supplementary Figure 2.** Binding of $^{35}$S-labeled $GAD_{65}$(1-585) (blue columns) and $GAD_{65}$(96-585) (red columns) with 10 control sera (panels a and c) and 6 patient sera (panels b and d) included in the DASP2010 workshop following competitive displacement with 5 pmol/well (panels a & b) or 0.05 pmol/well (panels c and d) recombinant $GAD_{65}$. Filled column areas represent displaced binding and open areas represent binding that does not compete. Patient sera show good displacement of binding at both concentrations of unlabeled GAD, and many control sera are displaced at 5 pmol/well unlabeled antigen. Most control sera however, including three reactive with epitopes in the middle region of $GAD_{65}$ (N51532, N56575 and N59932), show limited displacement at 0.05 pmol/well $GAD_{65}$ which indicates that these sera contain antibodies that are mainly of low affinity.



SUPPLEMENTARY DATA

**Supplementary Figure 3.** Adjusted sensitivity at 95% specificity (AS95) of RBAs in three selected laboratories using radiolabel generated from three different $GAD_{65}$ plasmid constructs. The N-terminally truncated $GAD_{65}$(96-585) gave the best performance in all laboratories.

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SUPPLEMENTARY DATA

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