

SUPPLEMENTARY DATA

Supplementary Table 1. C-peptide assay comparisons

Method	Vendor (product no.)	Detection Range* Lower limit** (pmol/L)	Figures
Standard Assay	Roche/Cobas (03184897-190)	370-1470 33.1	Fig. 1
Regular C-peptide assay	Mercodia (10-1136-01)	95-3720	Fig. 2-3,S1,S3
Ultrasensitive C-peptide assay	Mercodia (10-1141-01)	5-230 1.5	Fig1-3,S1,S3
*Detection range for 5 th to 95 th percentile			
**Lower limit defined as last value with CV less than 1.9%			

Supplementary Table 2. Linear regression analysis of factors affecting C-peptide production by ultrasensitive assay

Factors	Univariate Coefficient	P-value	Multivariate Coefficient	P-value
Duration	-3.26	0.0002*	-2.721	0.005*
Age	-1.95	0.020*		
Age at onset	1.37	0.179	1.031	0.331
Sex	25.02	0.391	40.678	0.136
GADA	0.06	0.590	-0.153	0.168
IA-2A	0.44	0.007*	0.163	0.351
ZnT8A	0.16	0.0004*	0.127	0.015*

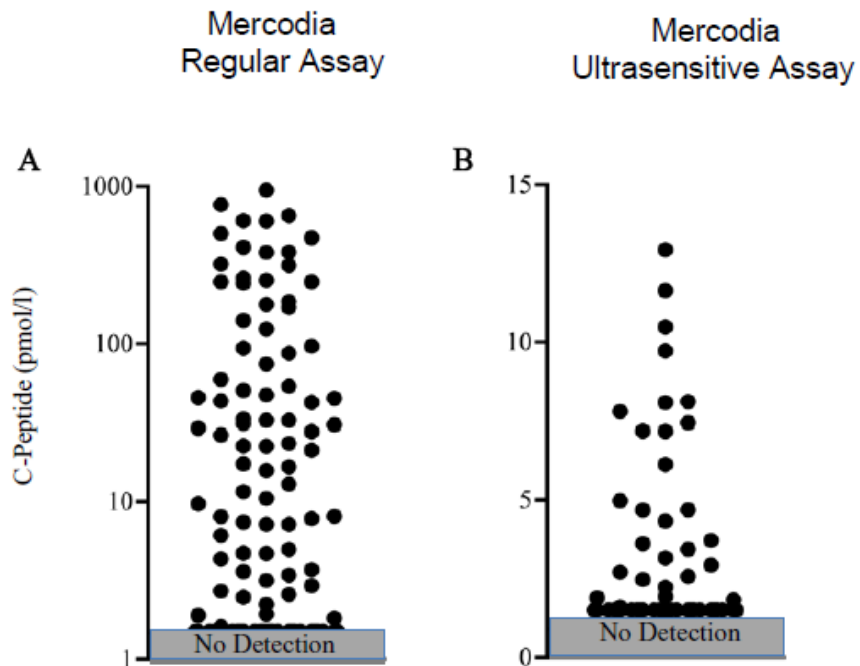
SUPPLEMENTARY DATA

Supplementary Table 3. Clinical characteristics of four patients whose C-peptide levels were tested weekly for up to 20 weeks.

Patients	#1	#2	#3	#4
Age of Onset	30	10	21	2
Age	47	33	28	26
Duration	17	23	7	24
Sex	M	M	F	M

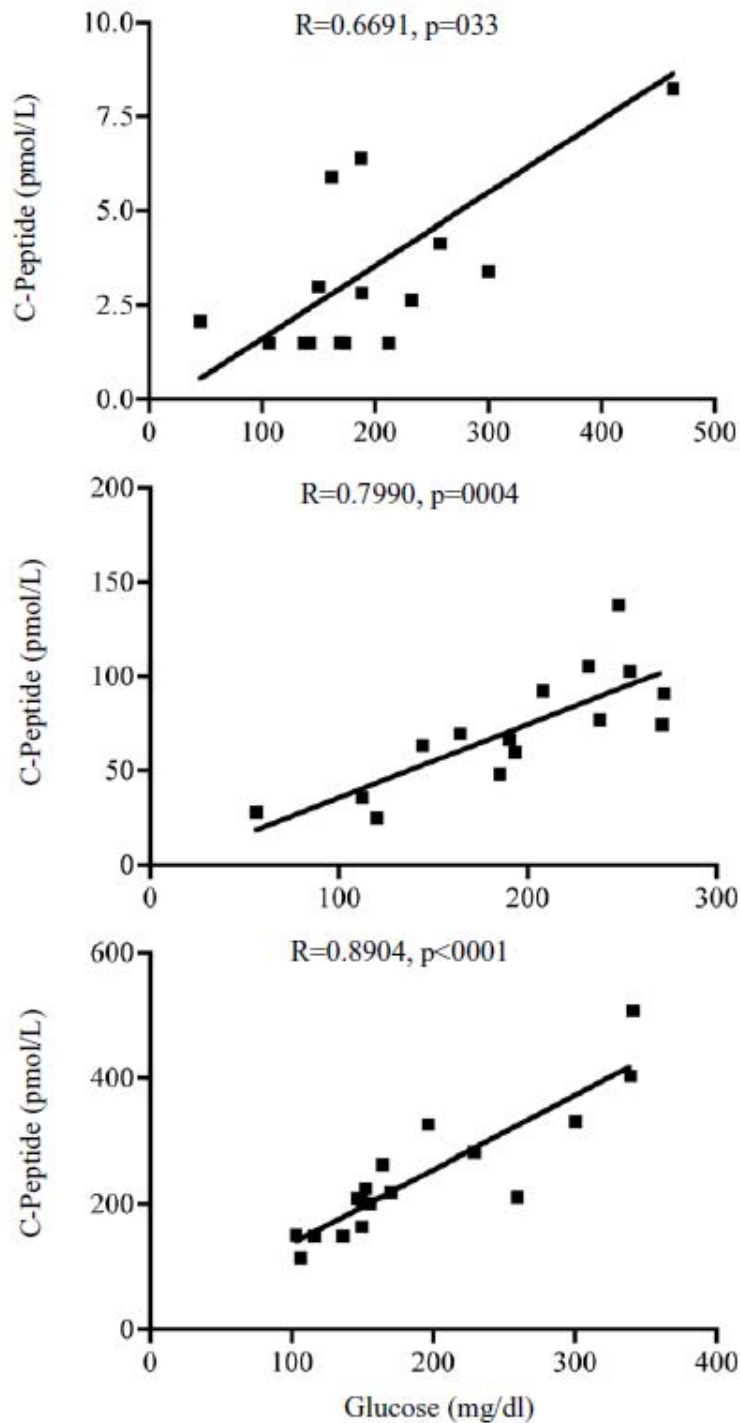
SUPPLEMENTARY DATA

Supplementary Figure 1. C-peptide levels from 182 type 1 diabetes patients were tested (A) using Mercodia regular assay or, if negative, in the regular assay (B) were re-run using the Mercodia ultrasensitive C-peptide assay the detection limits of which are 15 and 1.5 pmol/L, respectively. Solid circles represent each individual.



SUPPLEMENTARY DATA

Supplementary Figure 2. Influence of glucose on C-peptide in 3 long-term diabetic subjects followed up to 20 weeks using the Mercodia ultrasensitive assay for all values <230 pmol/L and the Mercodia regular assay for values >230pmol/l. All three long-term diabetics with different basal levels of C-peptide measured in the ultrasensitive C-peptide assay under non-fasting conditions. C-peptide levels, even at extremely low levels in subject 1 showed responsiveness to changes in glucose levels.



SUPPLEMENTARY DATA

Supplementary Figure 3. The influences on C-peptide from autoantibodies, gender and disease duration. The C-peptide levels with all the three autoantibodies tested were GADA, IA-2A and ZnT8A. A positive GADA is >43 units, IA-2A >5 units and ZnT8A >16 units. For the 182 subjects, 14% had three autoantibodies, 19% had two autoantibodies, 24% had one autoantibody and 21% had no autoantibodies. B. The influence of sex on C-peptide levels. C: Correlation between duration and age for all the 182 subjects

