### Supplementary table 1: Data below assay detection and outliers

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Prediabetes status** | | | |  | **Treatment group** | | | |
|  | **Total**  **(n = 185)** | **Normal glucose tolerance (n = 31)** | | **Prediabetes**  **(n = 77x2)†** | |  | **Placebo**  **(n = 40x2)** | | **Liraglutide**  **(n = 37x2)** | |
| **Cytokine** | **Below detection, no. (%)** | **Below detection‡, no. (%)** | **Outliers, no.** | **Below detection,**  **no. (%)** | **Outliers, no.** |  | **Below detection,**  **no. (%)** | **Outliers, no.** | **Below detection,**  **no. (%)** | **Outliers, no.** |
| **IFN-γ** | 2 (1.1) | 1 (3.2) | 3 | 1 (0.6) | 12 |  | 1 (1.3) | 7 | 0 | 5 |
| **TNF-α** | 0 | 0 | 1 | 0 | 8 |  | 0 | 3 | 0 | 5 |
| **IL-1β** | 12 (6.5) | 3 (9.7) | 1 | 9 (5.8) | 4 |  | 7 (8.8) | 3 | 2 (2.7) | 1 |
| **IL-2** | 62 (33.5) | 11 (35.5) | - | 51 (33.1) | - |  | 24 (30.0) | - | 27 (36.5) | - |
| **IL-4** | 7 (3.8) | 2 (6.5) | 2 | 5 (3.2) | 5 |  | 4 (5.0) | 4 | 1 (1.4) | 1 |
| **IL-6** | 0 | 0 | 1 | 0 | 4 |  | 0 | 4 | 0 | 0 |
| **IL-8** | 0 | 0 | 1 | 0 | 12 |  | 0 | 6 | 0 | 6 |
| **IL-10** | 0 | 0 | 2 | 0 | 3 |  | 0 | 3 | 0 | 0 |
| **IL-12p70** | 12 (6.5) | 1 (3.2) | 2 | 11 (7.1) | 4 |  | 6 (7.5) | 4 | 5 (6.8) | 0 |
| **IL-13** | 32 (17.3) | 5 (16.1) | 1 | 27 (17.5) | 0 |  | 12 (15.0) | 0 | 15 (20.3) | 0 |
| **Total** | 127 (6.9) | 23 (7.4) | 14 | 104 (6.8) | 52 |  | 54 (6.8) | 34 | 50 (6.8) | 18 |

† For each case there was a week 0 and week 16 measurement.

‡ Data below detection limit of the standard curve regressions calculated from performed assays.

### Supplementary table 2: Data below lower limit of detection (LLOD)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Prediabetes status** | |  | **Treatment group** | |
| **Cytokine** | **LLOD†**  **(pg/mL)** | **Below LLOD: tot. (n = 185), no. (%)** | **Below LLOD: NGT (n = 31), no. (%)** | **Below LLOD: PD (n = 77x2)**‡**,**  **no. (%)** |  | **Below LLOD: Placebo (n = 40x2), no. (%)** | **Below LLOD**: **Liraglutide (n = 37x2), no. (%)** |
| **IFN-γ** | 0.37 | 14 (7.6) | 3 (9.7) | 11 (7.1) |  | 3 (3.8) | 8 (10.8) |
| **TNF-α** | 0.04 | 0 | 0 | 0 |  | 0 | 0 |
| **IL-1β** | 0.05 | 70 (37.8) | 9 (29.0) | 61 (39.6) |  | 33 (41.3) | 28 (37.8) |
| **IL-2** | 0.09 | 115 (62.2) | 15 (48.4) | 100 (64.9) |  | 48 (60.0) | 52 (70.3) |
| **IL-4** | 0.02 | 83 (44.9) | 23 (74.2) | 60 (39.0) |  | 35 (43.8) | 25 (33.8) |
| **IL-6** | 0.06 | 0 | 0 | 0 |  | 0 | 0 |
| **IL-8** | 0.07 | 0 | 0 | 0 |  | 0 | 0 |
| **IL-10** | 0.04 | 1 (0.5) | 1 (3.2) | 0 |  | 0 | 0 |
| **IL-12p70** | 0.11 | 135 (73.0) | 22 (71.0) | 113 (73.4) |  | 56 (70.0) | 57 (77.0) |
| **IL-13** | 0.24 | 44 (23.8) | 10 (32.3) | 34 (22.1) |  | 16 (20.0) | 18 (24.3) |
| **Total** |  | 462 (25.0) | 83 (26.8) | 379 (24.6) |  | 191 (23.9) | 188 (25.4) |

Abbreviations: LLOD, lower limit of detection; NGT, normal glucose tolerance; PD: prediabetes

Calculations for data below LLOD were made after imputations of data below detection and substitution of outliers, as shown in supplementary table 1.

† LLOD is the lowest measurable concentration of the assay’s range, calculated by the manufacturer as the median concentration corresponding to the signal 2.5 standard deviations above the background (zero calibrator). The concentration was calculated based on 38 runs. The shown LLOD’s are adapted from the product insert, table 547.

‡ For each case there was a week 0 and week 16 measurement.

### Supplementary table 3: Data below lower limit of quantification (LLOQ)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Prediabetes status** | |  | **Treatment group** | |
| **Cytokine** | **LLOQ†**  **(pg/mL)** | **Below LLOQ: tot. (n = 185), no. (%)** | **Below LLOQ: NGT (n = 31), no. (%)** | **Below LLOD:**  **PD (n = 77x2)**‡**,**  **no. (%)** |  | **Below LLOQ: Placebo (n = 40x2), no. (%)** | **Below LLOQ**: **Liraglutide (n = 37x2), no. (%)** |
| **IFN-γ** | 1.76 | 123 (66.5) | 24 (77.4) | 99 (64.3)) |  | 50 (62.5) | 49 (66.2) |
| **TNF-α** | 0.690 | 24 (13.0) | 7 (22.6) | 17 (11.0) |  | 12 (15.0) | 5 (6.8) |
| **IL-1β** | 0.646 | 185 | 31 | 154 |  | 80 | 74 |
| **IL-2** | 0.890 | 171 (92.4) | 19 (61.2) | 152 (98.7) |  | 79 (98.8) | 73 (98.6) |
| **IL-4** | 0.218 | 185 | 31 | 154 |  | 80 | 74 |
| **IL-6** | 0.633 | 109 (58.9) | 24 (77.4) | 85 (55.2) |  | 47 (58.8) | 38 (51.4) |
| **IL-8** | 0.591 | 0 | 0 | 0 |  | 0 | 0 |
| **IL-10** | 0.298 | 123 (66.5) | 21 (67.7) | 102 (66.2) |  | 51 (63.8) | 51 (68.9) |
| **IL-12p70** | 1.22 | 185 | 31 | 154 |  | 80 | 74 |
| **IL-13** | 4.21 | 182 (98.4) | 31 | 151 (98.1) |  | 78 (97.5) | 73 (98.6) |
| **Total** |  | 1287 (70.0) | 219 (70.1) | 1068 (69.4) |  | 557 (69.6) | 511 (69.1) |

Abbreviations: LLOQ, lower limit of quantification; NGT, normal glucose tolerance; PD: prediabetes

Calculations for data below LLOQ were made after imputations of data below detection and substitution of outliers, as shown in supplementary table 1.

† LLOQ is the lowest concentration of the assay’s quantitative range. It is calculated by the manufacturer, at which the coefficient of variation of the calculated concentration is <20% and the recovery of each analyte is within 80% to 120% of the known value. The shown LLOQ’s are adapted from the product insert, table 547.

‡ For each case there was a week 0 and week 16 measurement.