**Supplementary table and figure legends**

**Supplementary Table 1**

Supplemental table 1 shows the within-run precision (intra-assay variability) for the iSYS immunoassay for 10-fold measurement of IGF-I in 6 native rabbit samples displaying either low, medium or high IGF-I concentrations. Mean within-run precision amounted to 1.1 – 3.3% CV (168 – 478 ng/ml).

**Supplementary Table 2**

Supplemental table 2 shows the total precision (inter-assay variability) for the iSYS immunoassay for measurement of IGF-I in 6 native rabbit samples at 5 different measurement days. The automated assay was freshly calibrated on each measurement day. Mean (total) precision amounted to 11.7 – 3.3% CV (173 – 396 ng/ml).

**Supplementary Table 3**

Supplemental table 3 shows the precision in the low range (Limit of Quantitation (LoQ)) for the iSYS immunoassay for measurement of IGF-I in rabbit serum. 5 native rabbit sera with previously measured (i.e. known) IGF-I concentrations were used. These 5 samples were divided into 4 aliquots each and diluted with assay-buffer to obtain samples yielding expected IGF-I concentrations between 20-25, 15-20, 10-15 and 5-10 ng/ml, respectively. Measurement of IGF-I was repeated 10 times in each diluted sample, for a total of 200 IGF-I measurements. Mean coefficients of variation (CV) from these 10 measurements were calculated for each IGF-I concentration interval. The analyses confirmed a functional sensitivity with an acceptable mean CV of the assay for rabbit IGF-I below 10 ng/ml (7.3ng/ml).

**Supplementary Figure 1**

Supplemental figure 1 displays circulating concentrations of the growth hormone antagonist Pegvisomant (GHA, blue) and of recombinant human growth hormone (rhGH, red) in rabbits after a single injection with 1 mg/kg of the respective drug. Serum samples have been collected prior to injection at baseline (“0h“) and 1, 2, 4, 8, 24 and 48h after injection with the respective drug. The pharmacokinetic behaviour of GHA and rhGH was clearly different in rabbits: rhGH concentrations peaked 1h after the injection, the highest concentrations of GHA were measured 8h after the injection. As expected, rhGH and GHA were not detectable

in PBS treated controls. For illustrative purposes in the figure, a black line (slightly above zero) shows the concentrations in controls. Data are presented as means±SEM (n=3/treatment group).

**Table S1**

Intra-assay variability

| | **low 1** | **low 2** | **med 1** | **med 2** | **high 1** | **high 2** |
|---|---|---|---|---|---|---|
| **replicate** | **sample 1** | **sample 2** | **sample 3** | **sample 4** | **sample 5** | **sample 6** |
| **1** | 163 | 195 | 277 | 263 | 429 | 472 |
| **2** | 167 | 203 | 287 | 268 | 432 | 485 |
| **3** | 160 | 203 | 295 | 274 | 433 | 480 |
| **4** | 161 | 199 | 276 | 260 | 421 | 472 |
| **5** | 171 | 205 | 288 | 268 | 429 | 475 |
| **6** | 174 | 201 | 288 | 267 | 427 | 480 |
| **7** | 167 | 195 | 275 | 262 | 410 | 475 |
| **8** | 175 | 198 | 280 | 276 | 432 | 483 |
| **9** | 174 | 199 | 278 | 270 | 423 | 485 |
| **10** | 169 | 201 | 281 | 260 | 414 | 471 |
| **Mean [ng/ml]** | **168.1** | **200** | **282.4** | **266.9** | **425.0** | **477.8** |
| **SD** | **5.5** | **3.5** | **6.7** | **5.7** | **7.8** | **5.4** |
| **% CV** | **3.3** | **1.8** | **2.4** | **2.1** | **1.8** | **1.1** |

**Table S2**

Inter-assay variability

| Sample | Measurement 1 | Measurement 2 | Measurement 3 | Measurement 4 | Measurement 5 | Mean [ng/ml] | SD | % CV |
|---|---|---|---|---|---|---|---|---|
| 1 | 182 | 176 | 176 | 180 | 175 | **178** | **3** | **1.7** |
| 2 | 166 | 169 | 179 | 179 | 172 | **173** | **6** | **3.3** |
| 3 | 183 | 176 | 174 | 172 | 174 | **176** | **4** | **2.4** |
| 4 | 401 | 394 | 387 | 408 | 389 | **396** | **9** | **2.2** |
| 5 | 352 | 344 | 357 | 370 | 343 | **353** | **11** | **3.1** |
| 6 | 352 | 356 | 368 | 365 | 355 | **359** | **7** | **1.9** |

**Table S3**

Precision in the low range

| Samples | Mean (and range of means) measured IGF-I concentrations from 10 measurements in 5 different rabbit sera [ng/ml] | Mean CV from 10 measurements in 5 different rabbit sera [%] |
|---|---|---|
| 1-5 | 23.8 (23.1-24.6) | 5.4 (2.6-8.8) |
| 6-10 | 18.0 (17.7-18.5) | 5.4 (3.1-7.6) |
| 11-15 | 13.0 (12.9-13.2) | 5.1 (3.7-7.5) |
| 16-20 | 7.3 (7.2-7.7) | 7.9 (4.9-10) |

**Supplementary Figure 1**