**Sexually dimorphic changes in the endocrine pancreas and skeletal muscle in young adulthood following intra-amniotic IGF-I treatment of growth-restricted fetal sheep**

**Supplementary Material**

**Authors list**

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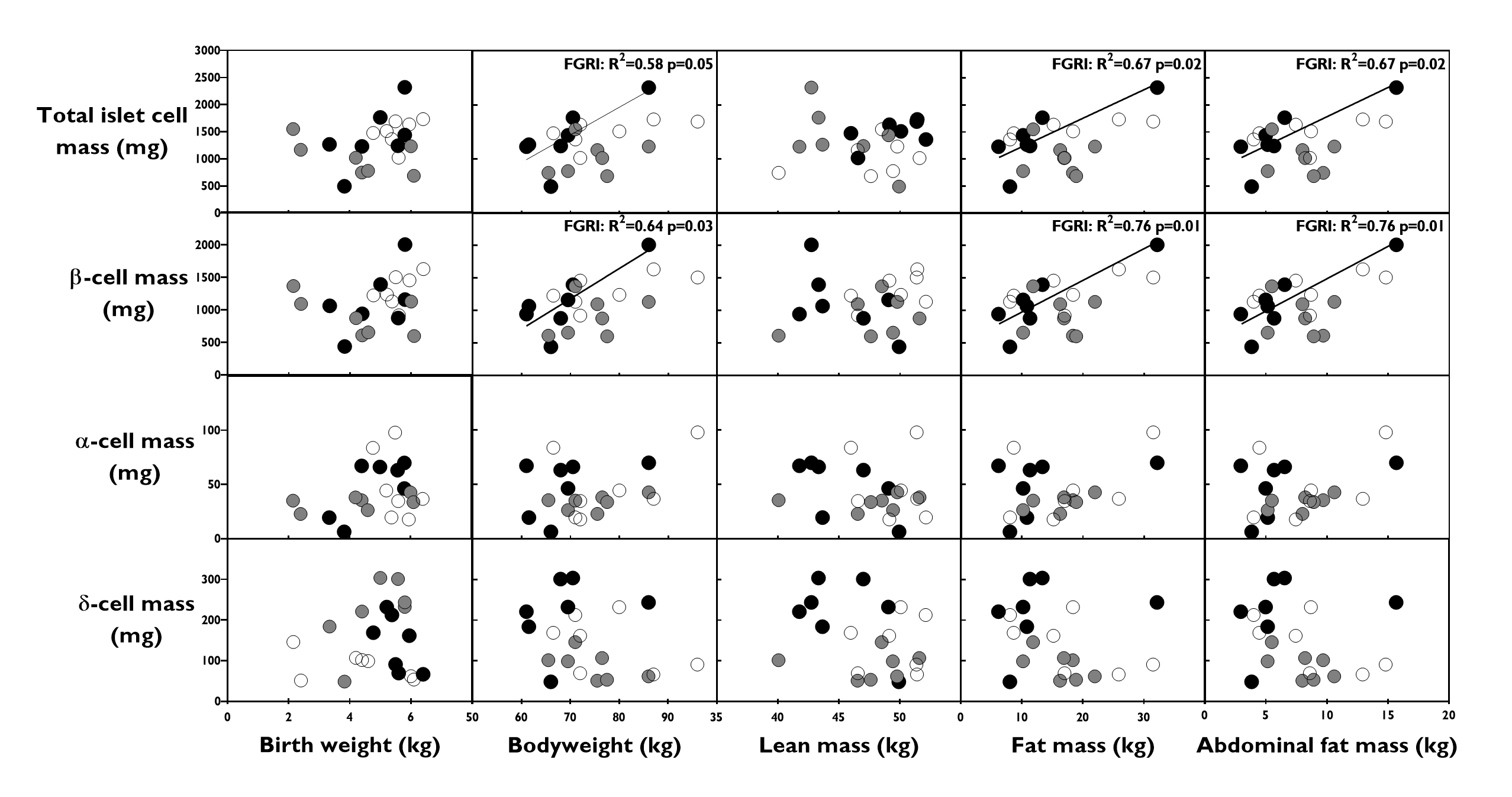
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**Running head**

Pancreas and muscle following IGF-I treatment of FGR lambs

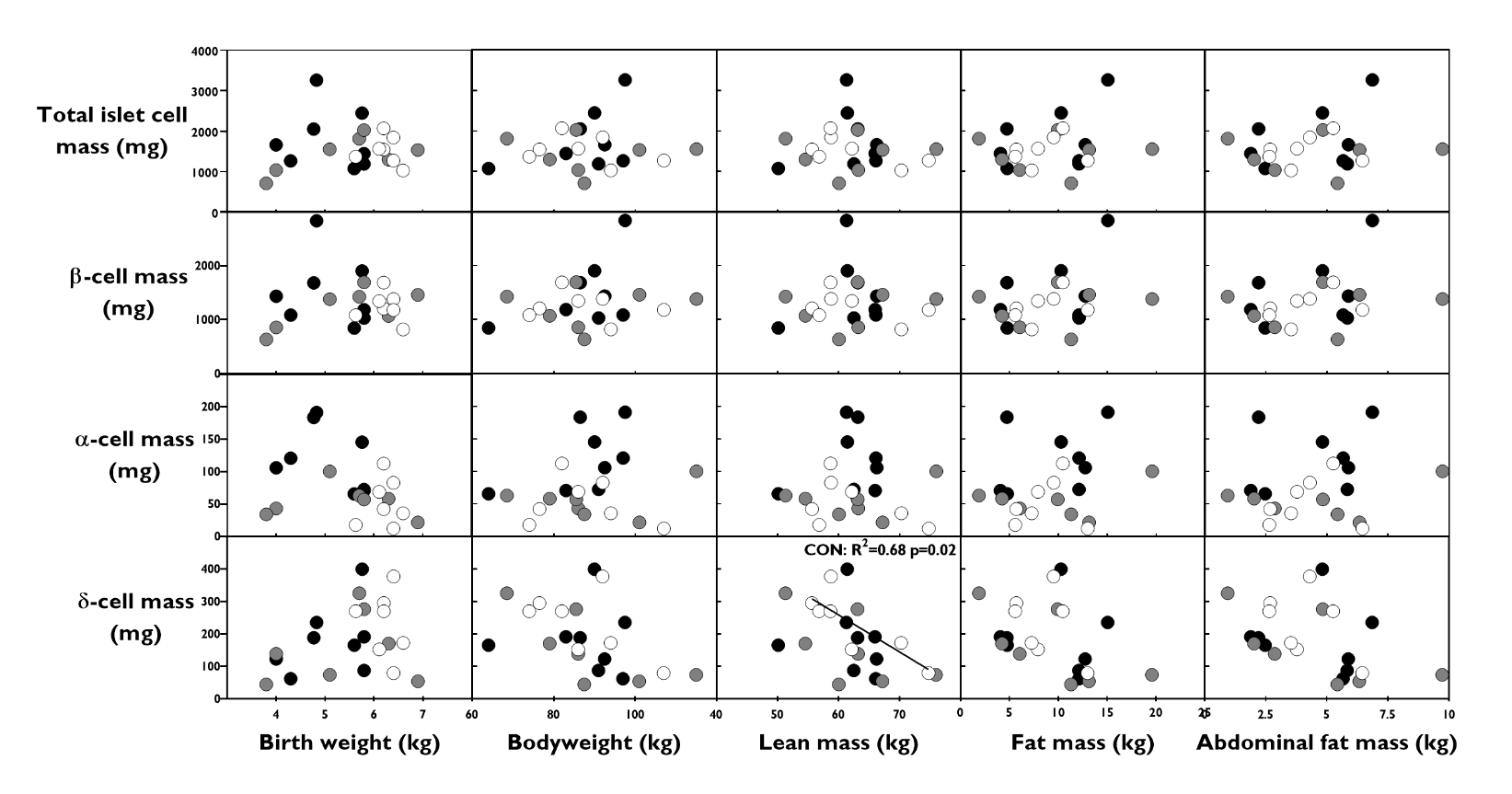
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**Supplementary Figure 1.**

Scatter plots of pancreatic endocrine cell mass vs. bodyweight and composition at 18-months of age in female CON (white, n=7), FGRS (grey, n=7), and IGFI (black, n=7) sheep. Statistically significant correlations are indicated.



**Supplementary Figure 2.**

Scatter plots of pancreatic endocrine cell mass vs. bodyweight and composition at 18-months of age in male CON (white, n=7), FGRS (grey, n=7), and IGFI (black, n=8) sheep. Statistically significant correlations are indicated.

**Supplementary Table 1.**

Primer and probe sequences for genes of interest.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gene name  (gene symbol) | Accession ID  (species) |  | Sequence  (5’-3’) | Size  (base pairs) |
| AKT Serine/Threonine Kinase 2  (AKT2) | NM\_001206146.1  (Bos Taurus) | F  R  P | CCCGAGCGAGGTGACA  CCAGCCTTCTTTGATGACAGACA  TCACGCTGCCACCATGA | 67 |
| Forkhead box O1  (FOXO1) | XM\_012184536.2  (Ovis Aries) | F  R  P | GTCAACATCCGCAGTCAATGG  GGGCCAGGCGGTTCATA  CCCCACGCTGTAAAC | 83 |
| Glucokinase  (GCK) | NM\_001102302.1  (Bos Taurus) | F  R  P | TGTGAGGTTGGCATGATTGTG  TCTGCATCTCCTCCATGTAGCA  CACGGGCTGCAACG | 61 |
| Glutathione peroxidase  (GPX) | L10325.1  (Bos Taurus) | F  R  P | ACATCCGGTGGAACTTTGAGAAG  GGTGGTACCAGCGCATGAT  CAGACGGCATCCCC | 69 |
| Insulin  (INS) | AH005355.3  (Ovis Aries) | F  R  P | GCAGAAGCGTGGCATCGT  TTACAGTAGTTCTCCAGCTGGTAGAGA  AGCAGTGCTGCGCC | 72 |
| Insulin Receptor  (INSR) | AJ844652.1  (Ovis Aries) | F  R  P | CCCCAACCTCACGGTCATC  CTCCTTCAGGTGAACCATCTCA  CTCGCGCCTCTTCTT | 82 |
| Insulin Receptor Substrate 1  (IRS-1) | EU681268.1  (Sus Scrofa) | F  R  P | GAAGTGGCGGCACAAGTC  GCCCGCTTGTTGATGTTGAAG  AAACGCTCGATCCCC | 77 |
| Insulin like growth factor 1  (IGF1) | NM\_001009774.3  (Ovis Aries) | F  R  P | CTTCCGGAGCTGTGATCTGA  TGAGCGGGCCGACTTG  CTGTGCGCCTCTCAAG | 73 |
| Insulin like growth factor 2  (IGF2) | NM\_001009311.1  (Ovis Aries) | F  R  P | CGAGGCATCCAGCGATTAG  TAGATGGTGTCACTTGGCAGAATT  AGTGAGCCAAAGTGTC | 62 |
| Insulin like growth factor 1 receptor  (IGF1R) | AY162434.1  (Ovis Aries) | F  R  P | TCTAACTTTGTCTTTGCAAGAACCA  TCACTGGCCCAGGAATGTC  CCTGCAGAAGGAGCAG | 64 |
| Potassium Voltage-Gated Channel Subfamily J Member 11  (KCNJ11) | NM\_001081598.1  (Bos Taurus) | F  R  P | GCAAGGCCGCTTCCTACA  GTGTATGGCCACTTGAGATCCA  CCAGCGTGGTGAACAC | 60 |
| Mitochondrially encoded ATP synthase membrane subunit 6  (MTATP6) | DQ320100.1  (Ovis Aries) | F  R  P | AGGCATGGCCATTCCTTTATGAG  GAAATGGGCGAGTGAAGCTTT  CTTCCGCAACAAAACT | 79 |
| Nuclear Respiratory Factor 1  (NRF1) | AF233354.1  (Ovis Aries) | F  R  P | GTTCGGTGCAGCTCCTTTG  CTTCCAGGATCATGCTCTTGTACTT  ACGCACCACATTCTC | 59 |
| PPARG Coactivator 1 Alpha  (PPARGC1A) | NM\_177945.3  (Bos Taurus) | F  R  P | TGTTTATAAATTCAGGACTAGCCATGGATG  AATGAATAGGACTGCGTGCCA  CTTCGCTGTCATCAAAC | 103 |
| PI3K Catalytic Subunit Beta  (PIK3CB) | NM\_001206047.1  (Bos Taurus) | F  R  P | TCCGGAACTGTGTAATGAACAGAAC  TGTTCATACAGCTTCTTGATCTTGCA  CATTCCACAAGTATAAAATG | 79 |
| Protein Kinase C Zeta  (PRKCZ) | NM\_001077833.2  (Bos Taurus) | F  R  P | GCCGTGGAGCCAGAAGAT  GCGCTTGGCCTGGAAGA  TTGGCGCGGTACAGCT | 65 |
| Peroxisome Proliferator Activated Receptor Gamma 1  (PPARG) | KF727439.1  (Ovis Aries) | F  R  P | TGCCACAGGCCGAGAAG  GGTCGATGTCGCTGGAGATC  CCGCTAACAGCTTTTC | 54 |
| Solute Carrier Family 2 Member 2  (SLC2A2) | AJ318925.1  (Ovis Aries) | F  R  P | GCTCTTCACCAATGCCAGCTA  GCCGCATGCAGCATCAAT  CCGACAGCCTATTCTAG | 60 |
| Solute Carrier Family 2 Member 4  (SLC2A4) | AY949177.1  (Ovis Aries) | F  R  P | GTCAACACAGTCTTCACCTTAGTCT  CCAGGCCCAGGAGATGGA  CCAGCCCGTTCCACC | 79 |
| Somatostatin  (SST) | NM\_001009196.1  (Ovis Aries) | F  R  P | CTGCTGTCTGAACCCAACCA  GCAGCCTGGGACAAATCTTCA  CAGGGCATCGTTCTCT | 65 |
| Transcription Factor A  (TFAM) | XM\_015104510.1 (Ovis Aries) | F  R  P | TGCGTATGTTCCAAAATGGTTTTCA  GCTGTTCTTTAGAAAACCGAACGT  CAGCTTGAGTGGTTATCC | 89 |
| Uncoupling Protein 2  (UCP2) | NM\_001280682.1 (Ovis Aries) | F  R  P | AGCCAACGGATGTGGTGAAG  CTCAACAGTGCTCTGGTACCT  CCTGCGCTTGGAACC | 80 |
| Beta-Actin  (ACTB) | NM\_001009784.1 (Ovis Aries) | F  R  P | ACCAGTTCGCCATGGATGATG  CCGGAGCCGTTGTCAAC  ATATTGCTGCGCTCGT | 55 |
| Peptidylprolyl Isomerase A  (PPIA) | AY251270.1  (Ovis Aries) | F  R  P | GTACTGGTGGCAAGTCCATCT  CAGGACCTGTATGCTTCAGAATGA  ATGGCGAGAAATTTG | 72 |
| Glyceraldehyde-3-Phosphate Dehydrogenase  (GAPDH) | NM\_001190390 (Ovis Aries) | F  R  P | GGGCTGCTTTTAATACTGGCAAA  CATGTAGACCATGTAGTGAAGGTCAA  CATCGTTGCCATCAATG | 80 |
| Ribosomal Protein L19  (RPL19) | AY158223.1  (Ovis Aries) | F  R  P | CAAAAACAAGCGGATTCTCATG  GCTTCTTGCGAGCCTTGTCT  AACATATCCACAAGCTGAA | 65 |
| Tyrosine 3-Monooxygenase/ Tryptophan 5-Monooxygenase Activation Protein Zeta  (YWHAZ) | AY970970.1  (Ovis Aries) | F  R  P | GAGGGTCGTCTCCAGTATTGAG  TTCTCGAGCCATCTGCTGTTTT  CAGCACCTTCCGTCTTT | 67 |

Forward (F), reverse (R), and probe (P) sequences for genes of interest and reference genes.