In vitro variation in primary satellite cell proliferation and differentiation within litters of pigs

By

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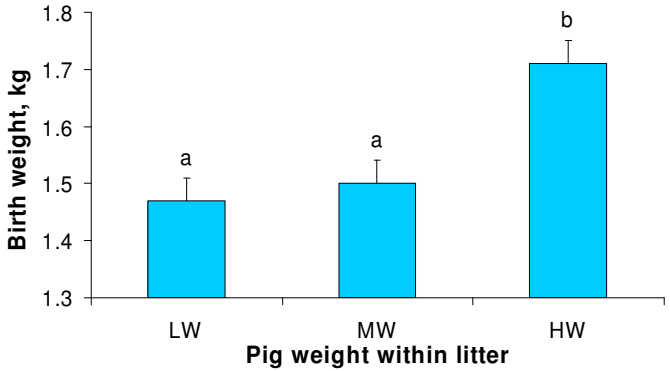
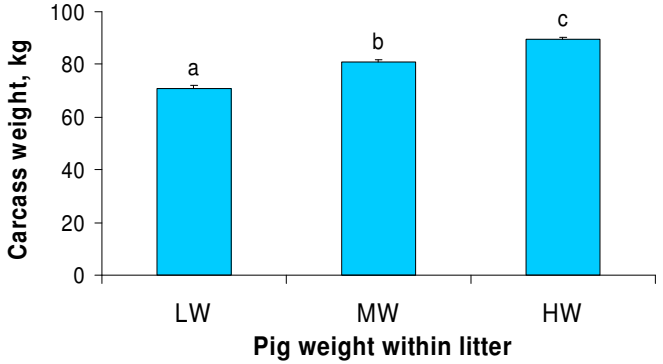
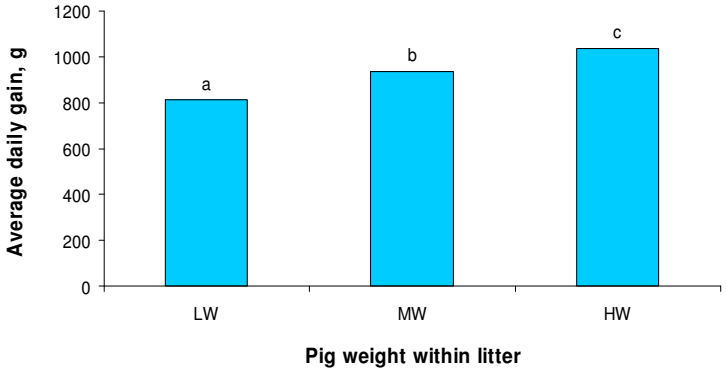
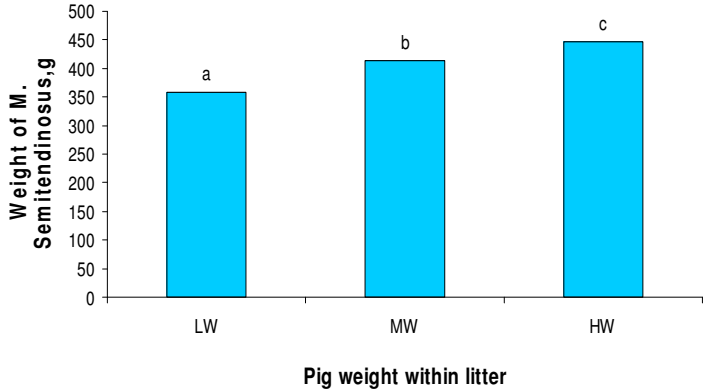
Intra-litter variation in growth









Nissen et al., 2004

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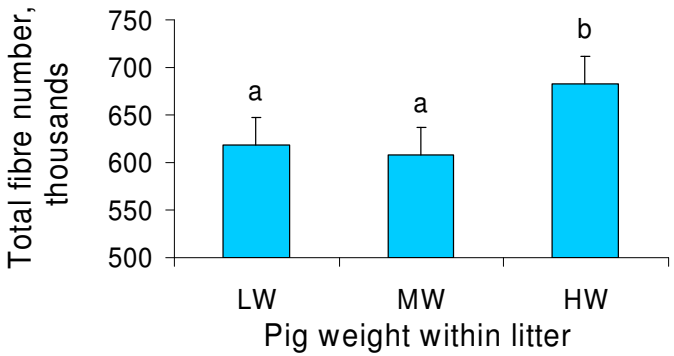
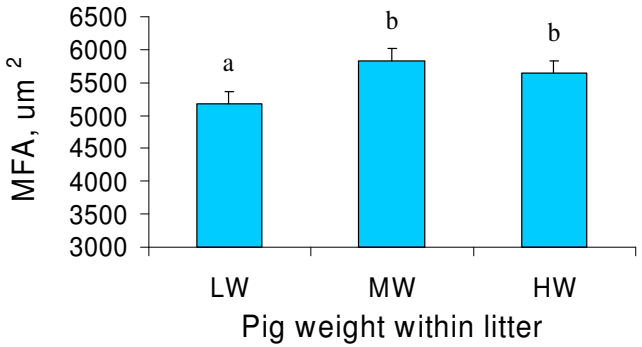
Intra-litter variation in muscle fibres





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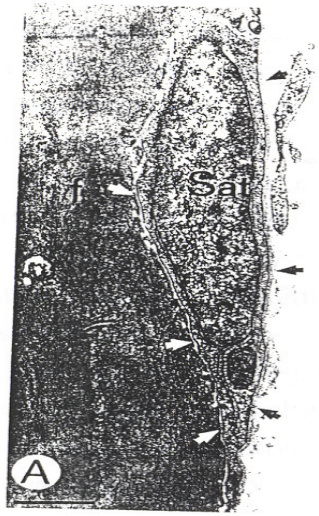
Postnatal muscle growth

- Protein turnover
  - Protein synthesis – protein degradation
- Satellite cell proliferation
  and differentiation



Figur 2.1. *Satellitcelle (Sat) der ligger mellem basal-membranen (sorte pile) og sarcolemme (hvide pile) (fra Yablonka-Reuveni, 1995).*

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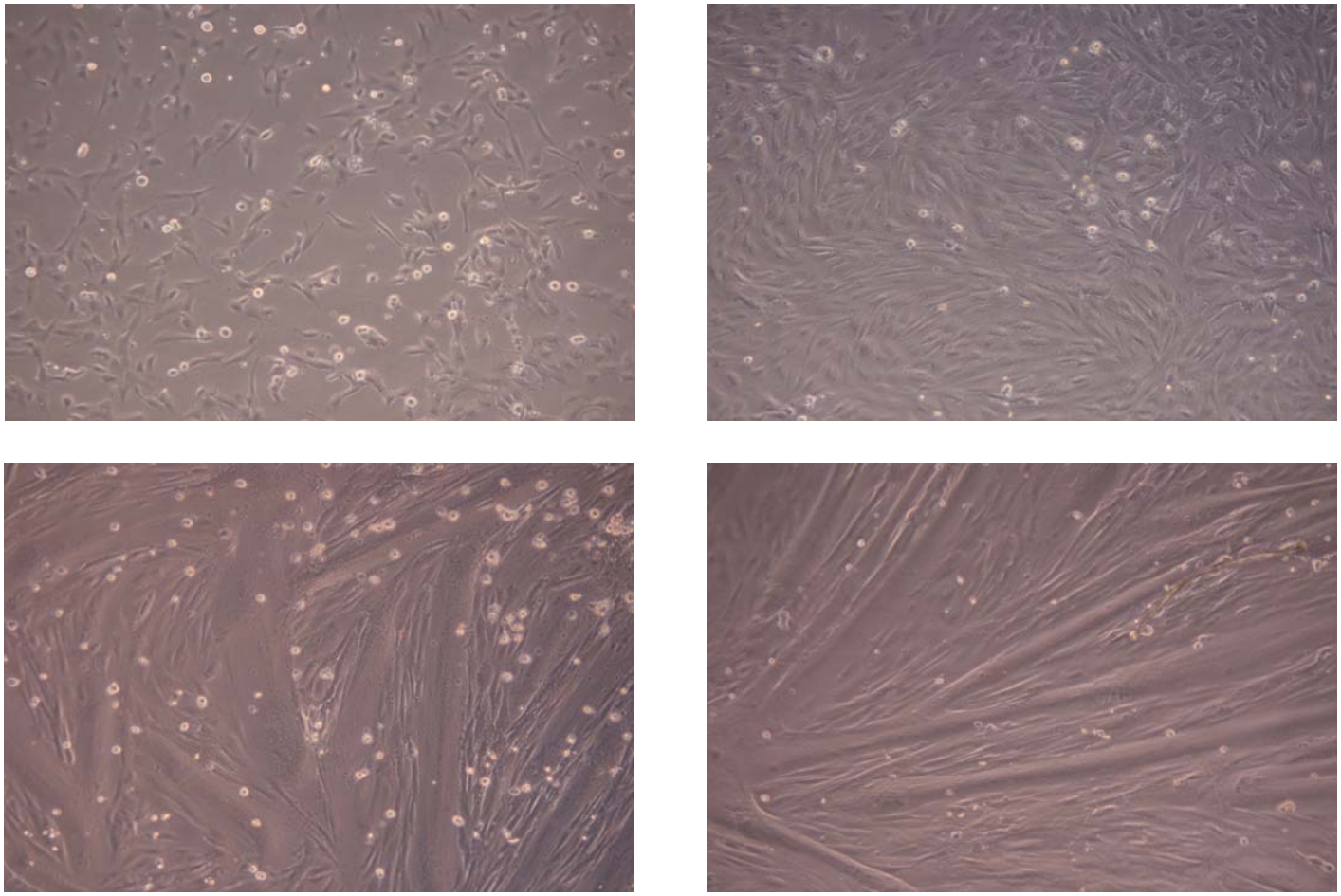
Porcine primary satellite cells



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Isolation of satellite cells

- 6 weeks old female pigs
- LW, MW and HW from 8 litters
- Muscle tissue from *M. Semimembranosus*
- Digestion by trypsin and centrifugation through 20% percoll

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Assays

- Satellite cell proliferation by WST-1
- Satellite cell differentiation by CPK-activity
- Protein turnover by isotope labelling

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Why do they behave differently?

- Programming during foetal development??
- Protein expression within cells (2-DE and MS)
- Proteins in cell media (LC-MS)

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