

**EXPRESSION OF IMPRINTED GENES SURROUNDING THE *CALLIPYGE* MUTATION
IN OVINE SKELETAL MUSCLE***

Tony Vuocolo¹, Noelle E. Cockett² and Ross L. Tellam¹

¹CSIRO Livestock Industries, Queensland Biosciences Precinct,
306 Carmody Road, St. Lucia, Qld 4067, Australia.

²Utah State University, Logan, Utah, USA

SUMMARY

The *Callipyge* mutation in sheep results in post-natal hypertrophy and leanness of skeletal muscles in the pelvic limbs and loins. Associated with this are changes in the expression of a number of imprinted genes flanking the site of the mutation, which lies at the telomeric end of ovine chromosome 18. The transcripts from several of these genes are alternatively spliced or undergo substantial RNA processing, sometimes in a very complex manner. The current investigation examined the effects of the *Callipyge* mutation on the relative expression of some of these splice variants and their changes in expression in samples taken at birth when the muscle hypertrophy phenotype is not expressed compared with 12 weeks of age when the phenotype is fully apparent. It is concluded that changes in the post-natal developmental expression pattern of *Dlk-1* are closely associated with the expression of the phenotype and that the *Callipyge* mutation may be promoting a fetal-like gene expression program for some genes during post-natal life.

* From invited paper. The full text, including this abstract is published in *Australian Journal of Experimental Agriculture* **45**, (7-8) in press.