

This issue contains the Hot Section on *Satellite cell regulation in agriculturally important animals* guest-edited by one of us. The ten articles are devoted to meat animal-derived satellite cell research. This first complete collection devoted by any journal to this emerging field is of interest to both scientists and policy makers of Funding Agencies and Biotechnologies/Farming Industries. Manuscripts range from classical to cutting-edge, from growth factors to myoblast transfer applications. While lagging behind those researchers studying cell lines or rat-derived satellite cells (due to initial system/technique development), use of domestic animals for satellite cell research has increased for many reasons. One muscle (rather than many as in case for rodent satellite cell work) may supply sufficient cells for numerous types of experimental designs that may be run simultaneously. Judicial selection of any one muscle may result in predominantly fast, slow or mixed fibers, hence from rather homologous to mixed satellite cells for study will result. Other reasons for selecting domestic animals for satellite cell research include cost (not as high as one might expect, as the remaining carcass may in most cases be used for consumption), and similarities and differences of the satellite cells to other cell systems makes for good side-by-side comparative models. Currently, research with meat animal-derived satellite cell-systems is focused on basics: satellite cell activation, and satellite cell proliferation and differentiation in cell culture. Furthermore it is of interest to study the regulation that satellite cell-derived myonuclei exerts on myofiber hypertrophy. As stated in the introductory manuscripts co-authored by the Authors which contributed papers to the Hot Section, long-term applications of these studies are practical ways: i) to enhance the efficiency of lean muscle growth, reducing feeding of energy and protein sources to meat animals, and improving the yield of edible products; ii) to improve meat quality; iii) to provide alternative methods or criteria for genetic selection of replacement animals; iv) serve as important comparison systems to identify mechanisms for muscle response to exercise; and v) serve as models for human myopathy research and gene therapy.

We hope that this issue and our continuous efforts attract new pupils to these emerging Applications of Myology.

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