Avian retroviral transgenesis approaches: gain & loss of function

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SUMMARY:
The embryonic chick provides an excellent model system for studies of developmental biology. RCAS (Replication Competent ALV LTR with a Splice acceptor) is a replication-competent retroviral vector system that allows in ovo sustained misexpression of a gene of interest in avian cells. RCAS is a modified version of an avian Rous sarcoma virus and this tool has been used to gain- and loss-of-function approaches to identify key signaling pathways and factors involved into organ and tissular development. Moreover these approaches are now widely used in cell biology. Advantages and limitations of the RCAS approaches will be discussed.

ILLUSTRATION:

KEYWORDS:
chick model in ovo transgenesis morphogenesis

REFERENCES
McKey et al. 2016. LIX1 regulates YAP1 activity and controls the proliferation and differentiation of stomach mesenchymal progenitors. BMC Biol. 14:34.