COMPARATIVE EFFICACY OF FELINE LEUKEMIA VIRUS INACTIVATED WHOLE VIRUS VACCINE AND CANARYPOX VIRUS-VECTORED VACCINE BY MODERN MOLECULAR ASSAYS AND CONVENTIONAL PARAMETERS

M. Patel[1], K. Carritt[1], J. Lane[1], H. Jayappa[1], M. Stahl[2]. 1. Merck Animal Health, Elkhorn, NE. 2. Merck Animal Health, Summit, NJ.

The purpose of this study was to compare the efficacy of two commercially available feline leukemia vaccines, Nobivac® Feline 2-FeLV (inactivated whole virus vaccine) and PureVax® Recombinant FeLV (live canarypox virus-vectored vaccine) following challenge with virulent feline leukemia virus.

Cats were vaccinated subcutaneously at 8 and 11 weeks of age with Nobivac® Feline 2-FeLV vaccine (Group A, *n* =11) or PureVax® Recombinant FeLV vaccine (Group B, *n*=10), three weeks apart per manufacturer's label. Group C (*n*=11*)* served as age-matched, unvaccinated controls. Three months after second vaccination, all cats were challenged with virulent FeLV-A/61E. Challenge outcome was monitored for 12 weeks post-challenge (PC) for the development of persistent viremia utilizing a commercial FeLV p27 ELISA. Circulating proviral DNA and plasma viral RNA loads were determined by quantitative PCR and real-time RT-PCR assay, respectively, from week 3 to 9 PC to determine whether FeLV vaccination would prevent nucleic acid persistence.

Persistent viremia was observed in 0 of 11 (0%) of Group A cats, 5 of 10 (50%) of Group B cats and 10 of 11 (91%) of Group C cats. Cats in Group A were significantly protected from persistent viremia compared to Group B cats (P <0.013) and Group C cats (P <0.0001). No significant difference was found between Group B cats and Group C cats (P >0.063). Persistent viremia preventable fraction was 100% for Group A and 45% for Group B. At the end of 9 weeks post-challenge, proviral DNA and plasma viral RNA were detected in 1 of 11 (9%) Group A cats, 6 of 10 (60%) Group B cats and 9 of 11 (82%) Group C cats. Proviral DNA and plasma viral RNA loads were significantly lower in Group A than Group C cats (P <0.01). Group A cats had significantly lower proviral DNA loads than Group B cats from week 6 to 9 (P <0.02). Detectable plasma viral RNA loads were also significantly lower in Group A cats than Group B cats from week 7 to 9 (P <0.01). Proviral DNA loads as well as plasma viral RNA loads were strongly associated with the persistently viremic cats.

The results demonstrate that Nobivac® Feline 2-FeLV vaccinated cats were fully protected against persistent viremia and had significantly lower amounts of proviral DNA and plasma viral RNA loads compared to PureVax® Recombinant FeLV vaccinated cats and unvaccinated control cats.

Dr. Mayur N. Patel, DVM, MVSc
Sr. Principal Scientist, Research & Development
Merck Animal Health
Website: www.merck-animal-health.com/