

# 5<sup>th</sup> World Congress on **Biotechnology**

June 25-27, 2014 Valencia Conference Centre, Valencia, Spain

## Restriction of heterologous lentiviruses by caprine Trim5 $\alpha$

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Trim5 $\alpha$  (T5 $\alpha$ ) is an important antiretroviral element of the innate immune response and plays an important role in species-specific restriction of lentiviruses by docking viral capsid protein and leading into proteasome-mediated digestion. Over expression of ovine T5 $\alpha$  appears to be responsible for restriction against Visna/ Maedivirus (VMV), as described in our previous studies. In this study we explore the restriction pattern of caprine cells (belonging to a goat synovial membrane cell line, GSM-T) against a panel of vesicular stomatitis virus protein G (VSV-G) pseudotyped heterologous retroviruses HIV-1, HIV-2, SIVmac, MLV-N and MLV-B. Upon exposure of GSM-T cells to the pseudotyped viruses, SIVmac and MLV-N showed significantly decreased titers compared to those found in permissive feline cells (CRFK) used as control, which suggested the existence of a restriction factor in the GSM-T cell line. To determine its existence, T5 $\alpha$  from GSM-T (Ca6) was cloned into EXN plasmid and the resulting vector packaged into VSV-G pseudotyped MLV cores, yielding virions encoding Ca6. MDTF cells transduced with these virions stably expressed Ca6 and effectively restricted incoming SIVmac particles but not those of MLV-N. Therefore, the caprine T5 $\alpha$ Ca6 appeared to be responsible for the restriction of SIVmac observed. However, additional molecules (other T5 isoforms or restriction factors like APOBEC3 or Tetherin) are needed to explain restriction against MLV-N. Lentiviral restriction by innate immunity intrinsic factors of heterologous origin may open new therapeutic strategies against human and animal lentiviral infections.

### Biography

L. de Pablo is recipient of a pre-doctoral fellowship of the Public University of Navarre (Pamplona Spain) at the Institute of Agrobiotecnología (CSIC-UPNA-Government of Navarre). Her research on animal health is carried out in the fields of immunology, genetics and virology. Her thesis entitled "Innate immunity against small ruminant lentiviruses (SRLV)" involves the study of retroviral restriction factors. Lorena de Pablo (Logroño, 1986) graduated in Biology, obtained her Master's degree in Health Sciences at the University of Navarre (Pamplona, Spain) and has different Congress contributions. Presently, she is working in the experimental phase of her pre-doctoral period, being enrolled at the Public University of Navarre doctoral study program.

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