Polymorphism in PrP and its relevance for moose and public health

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Principal Investigators

Margareta Stéen

Institution

Swedish University of Agricultural Sciences

Contact information of lead PI
Country

Sweden

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Polymorphism in PrP and its relevance for moose and public health

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Research Abstract
Prion protein (PrP) encoded by the gene PRNP is conserved among mammals pointing to an essential but unclear function. A polymorphism in moose PRNP seems to affect the proteolytic processing of PrP. We now want to further investigate this and the genetics of the PRNP mutation and elucidate potential associations between PRNP and moose health. Amino acid variations at critical positions in PrP have influence on pathology, disease susceptibility, incubation time, and prion disease transmission between species. We will examine brain tissue from healthy and sick moose with Moose Wasting Syndrome (MWS), present in Sweden since the -80´s and determine how gene variants are associated to MWS. In MWS moose Cu and Zn balance is known to b severely altered and resarch has shown that major cleavage sites of

PrPC may vary in response to Cu2+ and Zn2+. We therefore want to further investigate the association between proteolytic pattern, metal ion level, genotype and MWS. Association between PRNP with health condition in wild and domestic ungulates as well as humans is of concern. Understanding the process and genetic diversity of PrP is important for food security and human health, since 4-5% of Swedish meat consumption consist of moose and roe deer. The hypothesis is that MWS is a prion disease with potential biohazard effect and our objectives are in accordance with recommendation by European Food Safety Authority.

Further information available at:

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