OPII-1

Disease incidence and incubation period of BSE and CH1641 in sheep is associated with PrP gene polymorphisms.

1993-202

Goldmann W., Hunter N., Benson G., Foster J. and Hope J.
AFRC&MRC Neuropathogenesis Unit, Institute for Animal Health, West Mains Rd. Edinburgh EH9 3JF, U.K.

The relative survival periods of mice with different *Sinc* genotype have long been used for scrapie strain typing. The PrP protein, a key molecule in the pathogenesis of scrapie and related diseases, is a product of the *Sinc* locus and homologous proteins are also linked to disease-incidence loci in sheep and man. In sheep alleles of this locus (*Sip*) encode several PrP protein variants, of which one has been associated with short incubation periods of Cheviot sheep infected with SSBP/1 scrapie. Other isolates, i.e. BSE or CH1641, cause a different pattern of incubation periods and a lower disease incidence in the same flock of Cheviot sheep. Using transmission to sheep of known PrP genotype as our criterion for agent strain typing, we have found a link between BSE and CH1641, a C-group strain of scrapie. Disease susceptibility of sheep to these isolates is associated with different PrP genotypes compared to SSBP/1 scrapie.

OPII-2

Transmission of Bovine Spongiform Encephalopathy in sheep, goats and mice.

Foster J., Hope J., McConnell I. and Fraser H.

Institute for Animal Health, AFRC and MRC Neuropathogenesis Unit, Kings Buildings, West Mains Road, Edinburgh EH9 3JF

Bovine Spongiform Encephalopathy (BSE) has been transmitted in two lines of genetically selected sheep [differing in their susceptibilities to the SSBP/1 source of scrapie], and to goats by intracerebral injection and by oral dosing. Incubation periods in sheep for both routes of challenge ranged from 440-994 days. In goats this range was 506-1508 days. Both routes of infection in sheep and goats were almost equally efficient. In mice, primary transmission of BSE identified a sinc-independant genetic control of incubation period. Also, intermediate passage of BSE in sheep or goats did not alter these primary transmission properties. Hamsters were susceptible to BSE only after intervening passage through mice.