



STREP

Thematic priority: Food quality and safety

FOOD-CT-2006-36353

goatBSE

**Proposal for improvement of goat TSE discriminative diagnosis
and susceptibility based assessment
of BSE infectivity in goat milk and meat.**

Deliverable 3.3

**The phenotypic biological characteristics of European natural scrapie
isolates**

Due date: M58-M72

Realisation date: M60: November 2011

Period covered: December 2006 to November 2012
Start date: Dec 2006

Revision date: 22 January 2013
Duration: 58-72 months*

Lead contractor: P3, ISS, Italy

Revision: Jan2013-v1

Deliverable 3.3

Project co-funded by the European Commission within the Sixth Framework Program (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

*This document follows DOW version v041 (file: revised STREP FULL - GoatBSE v041 extension year 5-6.pdf) and follows deliverables list update on Dec 8 2011 (filename: deliverables table 8dec2011 DOWversion 041.pdf).

Deliverable 3.3

The phenotypic biological characteristics of European natural scrapie isolates.

The capacity to discriminate accurately BSE cases within a background of a variety of scrapie isolates appears crucial in terms of control measures and human health protection. TSE strains identification historically relied on congenic mouse line bioassays. This method is time consuming and expensive, but remain indispensable where rapid PrP-specific antibody dependent assays (immunohistochemistry and biochemical assays) remain dubious. Moreover, depending on the source species of the isolate as well as the strain properties in the isolate, rodent models can be used for evaluating presence of BSE-like diagnosis and studying variation in properties of other TSEs like classical scrapie, Nor98/atypical scrapie and CH1641-like scrapie.

This document shortly overviews which biological markers have been studied for the goat TSE-isolates in our European natural scrapie isolate selection. The outcomes of these markers will be discussed in other deliverable documents.

The phenotypic biological characteristics of the best studied natural goat TSE isolates are presented in **Table D3.3-1**. These represent 31 brain isolates including a reference BSE sample from a R/Q211, S/P240 goat that was challenged intracerebrally with bovine BSE at age 5 yr.

For each of these cases, overall diagnosis is given, and where available age, presence of clinical signs of TSE, neuropathology (vacuoles or amyloid), disease associated prion protein deposition (PrP^{Sc}) in central nervous system (CNS), gut nerves (ENS), and lymph nodes. For each of these isolates also tests are and were running for PrP genotype, structural character of PrP^{Sc}, as well as infection studies in mice and bank voles for preliminary strain typing.

It is clear from these natural goat TSE isolates that in addition to the central nervous system (brain and spinal cord) also the peripheral tissue can be infectious since frequently lymph nodes and ENS have been found positive for the diagnostic marker PrP^{Sc}.

country	Original ID no.	code CEA	overall diagnosis	Breed	Age (years)	herd (mixed = sheep & goats)	Clinical symptoms (Y/N)	neuropathology (lesions or amyloid)	CNS (PrP ^{Sc})	gut nerve ENS (PrP ^{Sc})	IHC lymph-node (PrP ^{Sc})
IT	114921/1/1	I2	scrapie	camosciata	10	herd	N	?	Y	ND	ND
	121429/1/1	I3	scrapie	meticcica	5	mixed	N	?	Y	ND	ND
	128710/1/1	I4	scrapie	saanen	3	herd	N	?	Y	ND	ND
	17646/1/1	I5	scrapie	meticcica	5	mixed	N	?	Y	ND	ND
	87016/1/1	I15	Nor98/ atypical	meticcica	6	herd	N	?	Y (obex Negative)	ND	ND
	85788/1/1	I7	scrapie	meticcica	>18mesi	mixed	N	?	Y	ND	ND
	85792/1/1	I9	scrapie	meticcica	6	mixed	N	?	Y	ND	ND
	117463/1/1	I11	scrapie	meticcica	9	mixed	N	?	Y	ND	ND
	144508/1/1	I12	scrapie	alpina	5	mixed	N	?	Y	ND	ND
NL	577227	N1	scrapie	dwarfgoat	2-3	mixed	Y	Y	Y	Y	Y
	586632-32	N2	scrapie	dwarfgoat	ND		N	Y	Y	Y	Y
	586632-33	N3	scrapie	dwarfgoat	ND		N	Y	Y	Y	Y
FR	2154	F11	scrapie	Saanen	ND	herd	N	Y	Y	Y	Y
	Cp40	F2	scrapie	Saanen	ND	herd	N	Y	Y	Y	Y
	2119	F6	scrapie	Saanen	ND	herd	N	Y	Y	Y	Y
	2143	F10	scrapie	alpine	ND	herd	N	Y	Y	Y	Y
	9041	F14	scrapie	alpine	ND	herd	N	Y	Y	Y	Y
	9135	F16	scrapie	alpine	ND	herd	N	Y	Y	Y	Y
	1028	F3	scrapie	Saanen	ND	herd	N	Y	Y	Y	Y
	1075*	1075	exprmntl BSE	Saanen	5	lab	Y	Y	Y	N	Y
SP	C-163	S2	scrapie	Alpine	6	herd	Y	Y	Y	Y	Y
	C-645	S3	scrapie	Crossbreed	4	mixed	Y	Y	Y	Y	Y
GR	6989	G4	scrapie	indigenous	4	mixed	N	Y	ND	ND	ND
	1663	G2	scrapie	indigenous	4		N	Y	ND	ND	ND
	1676	G3	scrapie	indigenous	4		N	N	ND	ND	ND
CYP	Zyp13	C1	scrapie	Damascus	4	ND	Y	Y	Y	Y	Y
	Zyp21	C2	scrapie	Damascus	5	ND	Y	Y	Y	Y	Y
	Zyp27	C3	scrapie	Damascus	3	ND	Y	Y	Y	Y	Y
UK	BR, G08-1469	B2	BSE?	Anglo-Nubian	8	mixed	N	Y	Y	Y	Y
	BR, G08-1475	A2	scrapie	Anglo-Nubian	4		Y	Y	Y	Y	Y
	BR, G08-1446	D2	scrapie	Saanen	7		N	N	Y	Y	Y
ND = not done or not possible or not available											
* IC boBSE challenge at age 5 yr; R/Q211; euthanized at 651 dpi											

Table D3.3-1. Overview of the phenotypic biological characteristics of the best studied natural goat TSE isolates.

*This document follows DOW version v041 (file: revised STREP FULL - GoatBSE v041 extension year 5-6.pdf) and follows deliverables list update on Dec 8 2011 (filename: deliverables table 8dec2011 DOWversion 041.pdf).