



Genetic Traits and Colour Codes

Gene Name	Description	Gene and Expression Code
BY	Brachyspina <i>(causes abortion & stillborn, shortened spinal cord, long legs & abnormal organs)</i>	BYC = tested carrier of Brachyspina BYF = tested non-carrier of Brachyspina
CVM	Complex Vertebral Malformation <i>(causes still-born calves, abortions, and early embryonic losses)</i>	CVC = tested carrier of CVM CVF = tested non-carrier of CVM
BLAD	Bovine Leucocyte Adhesion Deficiency <i>(deficiency of a normally occurring protein needed for white blood cells or leukocytes, which are body's infection fighters)</i>	BLC = tested carrier of BLAD BLF = tested non-carrier of BLAD
MULEFOOT	Mulefoot <i>(toes of foot are joined, giving animal a single hoof, instead of cloven ones)</i>	MFC = tested carrier of MULEFOOT MFF = tested non-carrier of MULEFOOT
DUMPS	Deficiency of Uridine Monophosphate Synthase <i>(one of many enzymes contributing to normal metabolic processes)</i>	DPC = tested carrier of DUMPS DPF = tested non-carrier of DUMPS
CHOLESTEROL DEFICIENCY	Cholesterol Deficiency	CDF = Tested Free of Cholesterol Deficiency CDC = Tested Carrier of Cholesterol Deficiency CDS = Tested True Cholesterol Deficiency
BETA CASEIN A2	Beta Casein	A2A2 = Beta Casein A2A2 A1A1 = Beta Casein A1A1 A1A2 = Beta Casein A1A2
FACTOR X	Factor XI Blood clotting disorder	XIC = tested carrier of FACTOR XI XIF = tested non-carrier of FACTOR XI
CIT	Citrullinemia Accumulation of ammonia and other toxics in blood in baby calves	CNC = tested carrier of CIT CNF = tested non-carrier of CIT
KAPPA CASEIN	Results are a combination of A, B and E gene types.	BB, AB, BE, AA, AE, EE
BETA LACTOGLOBULIN	Results are a combination of A and B gene types.	BL-AA, BL-AB, BL-BB
ALPHA S-1 CASEIN	Results are a combination of B and C gene types.	ACN-BB, ACN-BC, ACN-CC

Polled & Transmitting Codes

Gene Name	Description	Gene and Expression Code
POLLED	Animals without horns <i>(Reported born hornless – Not tested)</i>	POR = code
POLLED <i>(Current-Indirect test)</i>	Indirect Test	POS = tested true polled (homozygous PP) POC = tested carrier of polled (heterozygous Pp) POF = tested free of polled

Birth Codes (Secondary)

Code	Description
MB	Multiple Birth
ET	Embryo Transfer (<i>regular</i>)
ETA	Embryo Transfer Adult Clone
ETM	Embryo Transfer Manipulation (<i>Clone, Divided, Nuclear Transfer, Split</i>)

Coat/Hair Colour Codes

Code	Description
AB	All Black
AR	All Red
AW	All White
B/R	Black/red (<i>primarily B&W although exhibits reddish peculiar hair patterns-- muzzles, ears, dorsal stripe, etc.</i>)
B&W	Black and White
IC	Irregular or other colour (<i>non-typical animals</i>)
R&W	Red and White
LB	Lineback (animal having a distinct white stripe along the spine)

Coat/Hair Colour Transmitting Codes

Gene Name	Description	Gene and Expression Code
Homozygous Black (ED / ED)	B&W – black & white	RDF – Tested non-carrier of red gene
Red Carrier (ED / e)	B&W – black & white	RDC – Carrier of red gene
Homozygous Red (e / e)	R&W – red & white	
Heterozygous Wildtype (e / E+) ¹	B/R – black/red colour pattern R&W – red & white	RDC – Carrier of red gene
Heterozygous Black/Wildtype (ED / E+) ¹	B&W – black & white B&W – black & white	BRC – Carrier of black/red gene RDC – Carrier of red gene
Homozygous Wildtype (E+ / E+) ¹	R&W – red & white B/R – black/red colour pattern B&W – black & white	RDC – Carrier of red gene RDC – Carrier of red gene BRC – Carrier of black/red gene

Variant Red

R&W – red & white

VRR – Not tested / determined by lineage²
BKC – Carrier of black gene²
VRF – Free of Variant Red
VRC – Carrier of Variant Red
VRS – Homozygous Variant Red

**Confirmation test not available*

R&W – red & white

VRR – Not tested / determined by lineage²
BKC – Carrier of black gene²

GT Codes

Code

Description

GTM

Genotype on file from DNA Micro-satellite Test

GTS

Genotype on file from SNP Genomic Test

GT

Indicates on the animal info sheet (AIS) that the animal has been genotyped

*If both tests have been done, the code GTSM will be displayed

All results are made public, published on official documents and the Animal Inquiry page of the Holstein Canada website.

LEGEND

- ¹ E+ can be black, black/red or red based on pedigree.
- ² Confirmation test not available (at this time).