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VETERINARY GENETICS LABORATORY
SCHOOL OF VETERINARY MEDICINE
ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616-8744

TELEPHONE: (530) 752-2211
FAX: (530) 752-3556

CATTLE GENETIC MARKER REPORT

SARAH FLEMING
221 HOPE LN
DUNLAP, TN 37327

Case: **NC25484**
Date Received: 11-May-2015
Print Date: 25-Jan-2017
Report ID: 3631-1146-8027-6053
Verify report at www.vgl.ucdavis.edu/myvgl/verify.html

Name: **EPPIES LIL ROSE** *Reg:* **AMJ1327**

YOB: *Sex:* **Female** *Breed:*

ANALYSIS

Permanent Record.

GENETIC MARKERS

LOCUS	TYPE	LOCUS	TYPE	LOCUS	TYPE
BM1818	262/266	*BM1824*	182/188	*BM2113*	135/141
BRR	254/260	*CYP21*	190/198	*ETH003*	117
ETH10	215	*ETH225*	148/150	*INRA23*	198/208
RM006	110/118	*RM067*	90/92	*SPS115*	252/260
TGLA122	143/161	*TGLA126*	113/117	*TGLA227*	91/93
TGLA53	160/170				

The Veterinary Genetics Laboratory is an institutional member of ISAG. DNA types are reported according to standardized nomenclature for markers in the ISAG panel.

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DEXTER / POLLED TEST RESULTS

SARAH FLEMING
221 HOPE LN
DUNLAP, TN 37327

Case: **NC25484**
Date Received: 11-May-2015
Print Date: 07-Oct-2016
Report ID: 2724-9650-2440-1048
Verify report at www.vgl.ucdavis.edu/myvgl/verify.html

Name: **EPPIES LIL ROSE** *Reg:* **AMJ1327**

YOB: *Sex:* **Female** *Breed:*

MC1R (EXTENSION)	
Not Requested	
DUN	
Not Requested	
PHA	
Not Requested	
POLLED	POLLED. One copy of the Polled-Celtic molecular marker is present. At least 50% of the offspring will be polled.
Pc/H	
BULLDOG DWARFISM - BD1	Normal, does not have the Dexter BD1 Bulldog mutation.
N/N	
BULLDOG DWARFISM - BD2	
Not Requested	

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MILK PROTEIN DNA TEST REPORT

SARAH FLEMING
221 HOPE LN
DUNLAP, TN 37327

Case: **NC25484**
Date Received: 11-May-2015
Print Date: 20-Aug-2018
Report ID: 4288-5993-8110-6000
Verify report at www.vgl.ucdavis.edu/myvgl/verify.htm

Name: **EPPIES LIL ROSE** *Reg:* **AMJ1327**

YOB: *Sex:* **Female** *Breed:*

Beta Casein	Kappa Casein	Beta Lactoglobulin
A2/B	**B/B**	**A/B**

In the A2C nomenclature for A2 genotyping, the Beta Casein above corresponds to A1/A2.

Beta Casein (A2 Genotyping)* - milk yield and protein content. The A2 variant has been shown to have a positive association with milk yield and protein content. The expanded beta casein test reflected in this report detects variants A1, A2, A3, B, C, D, E, F, G, H1, H2, I, K and L.

Based on the aminoacid present in position 67 these variants can be classified into 2 groups - A1 and A2. Variants in the A1-group (Histidine) are A1, B, C, F and G. Variants in the A2-group (Proline) are A2, A3, D, E, H1, H2, I, K and L. The levels of bioactive peptide beta-casomorphin 7 (BCM7) produced from the metabolism of beta casein is several-fold higher for variants in the A1 group than in the A2 group. Higher levels of BCM7 have been associated with negative health effects in humans. Relative to levels of BCM7 production, variants within each group behave similarly but may differ in other properties.

Kappa Casein - protein yield and percentage. The A variant and AA genotype are associated with higher milk production. The B variant and BB genotype are associated with increased milk protein and casein content, and better cheese yield. Relative to protein content and cheese production, BB is the most favorable genotype, AB is intermediate and AA is the least favorable.

Beta Lactoglobulin - milk yield and whey protein content. The A variant is associated with increased milk yield and whey protein content. The B variant is associated with increased casein and fat content and is favorable for cheese production.

* The beta casein test was redesigned by the VGL to detect other known variants and improve resolution of the A2 genotyping test. This change applies to all samples tested since December 9, 2016. For more information, please see https://vgl.ucdavis.edu/services/A2Genotyping.php

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A2 GENOTYPING TEST

SARAH FLEMING
221 HOPE LN
DUNLAP, TN 37327

Case: **NC25484**
Date Received: 11-May-2015
Print Date: 16-May-2015
Report ID: 5262-7526-0062-1195
Verify report at www.vgl.ucdavis.edu/myvgl/verify.html

Name: **EPPIES LIL ROSE** *Reg:* **AMJ1327**

YOB: *Sex:* **Female** *Breed:* *Owner ID:*

Test Result

A1/A2

Result Codes:

A2/A2	2 copies of A2 present. If bred to other A2/A2 animals, only A2/A2 offspring will be produced
A1/A2	1 copy of A2 present. If bred to A2/A2 animals, 50% of offspring will be A2/A2
A1/A1	No copies of A2 present

As a licensed laboratory, VGL is required to send A2 Corporation Limited a copy of all A2 Gene Tests and to disclose the following:

VGL is an A2 Corporation Limited (A2C) accredited and registered A2 Gene Tester. A2 Gene Tests conform to the specification and are validated to the standards of A2C. A2C will only access information relating to you and your animals from testing carried out by the VGL for the purpose of contacting you about potential milk supply and to maintain a register of A2 gene tested animals. A2C owns various intellectual property rights (including patent rights, trade marks, and technical and commercial know how) relating to the commercial production and sale of a2™ branded milk or milk with reduced beta casein A1. It is possible that commercial use of test results may fall within the scope of such intellectual property rights, so if you intend to form a herd of animals used to produce a2™ branded milk or milk with reduced beta casein A1 on a commercial scale, you should contact A2C for more information.