

CATTLE PARENTAGE AND GENETIC MARKER TEST REPORT

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| <p><i>Provided Information:</i></p> <p><i>Name:</i> BBY JONATHAN</p> <p><i>Registration:</i></p> | <p><i>Case:</i> MJH54</p> <p><i>Date Received:</i> 08-Feb-2021</p> <p><i>Report Issue Date:</i> 03-Mar-2021</p> <p><i>Report ID:</i> 8733-2273-3198-8168</p> <p><i>Reissue of:</i> 5862-4822-6137-2111</p> <p style="text-align: center; font-size: small;">Verify report at www.vgl.ucdavis.edu/verify</p> |
| <p><i>DOB:</i> 01/24/2021 <i>Sex:</i> Male <i>Breed:</i> Mini-Mid Jerseys</p> | |
| <p><i>Sire:</i> HCC MATTHEW</p> <p><i>Reg:</i> pending</p> <p><i>Microchip:</i></p> | <p><i>Dam:</i> HCC ROSES LIL SNOWBALL</p> <p><i>Reg:</i> AMJ1549P</p> <p><i>Microchip:</i></p> |

RESULTS AND INTERPRETATION

BBY Jonathan qualifies as an offspring of HCC Matthew pending without consideration of the dam. Among the 2 males given to compare (NC47190, NC28551), only HCC Matthew pending qualifies as a possible sire.

GENETIC MARKERS

| LOCUS | TYPE | LOCUS | TYPE | LOCUS | TYPE |
|----------------|---------|----------------|---------|----------------|---------|
| <i>BM1818</i> | 262 | <i>BM1824</i> | 182/188 | <i>BM2113</i> | 135 |
| <i>BRR</i> | 254/260 | <i>CYP21</i> | 187/198 | <i>ETH003</i> | 117 |
| <i>ETH10</i> | 215 | <i>ETH225</i> | 148/150 | <i>INRA23</i> | 198 |
| <i>RM006</i> | 118 | <i>RM067</i> | 90/92 | <i>SPS115</i> | 260/261 |
| <i>TGLA122</i> | 149/161 | <i>TGLA126</i> | 117 | <i>TGLA227</i> | 81/83 |
| <i>TGLA53</i> | 170 | | | | |

CATTLE PARENTAGE AND GENETIC MARKER TEST REPORT

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| Client/Owner/Agent Information: JOSHUA AND LIYA FLEMING 221 HOPE LN DUNLAP, TN 37327 | Case: MJH54 Date Received: 08-Feb-2021 Report Issue Date: 03-Mar-2021 Report ID: 8733-2273-3198-8168 Reissue of: 5862-4822-6137-2111 Verify report at www.vgl.ucdavis.edu/verify |
| Name: BBY JONATHAN | |

Additional Information

If testing for a disease or a disorder was performed and results indicate the animal is affected or at risk, we recommend contacting your veterinarian for further clinical evaluation and for additional information on disease and management.

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

For more detailed information on Parentage test results, please visit our website at:
www.vgl.ucdavis.edu/services/dnatyping.php

Additional Comments

For terms and conditions of testing, please see www.vgl.ucdavis.edu/about/terms-and-conditions

Results are determined using PCR-based methods. The results relate only to the sample tested as identified by the submitter (for example, identity and/or breed).

Report authorized by Dr. Rebecca Bellone, VGL Director

DEXTER GENETIC TEST REPORT

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| <p><i>Provided Information:</i></p> <p><i>Name:</i> BBY JONATHAN</p> <p><i>Registration:</i></p> | <p><i>Case:</i> MJH54</p> <p><i>Date Received:</i> 08-Feb-2021</p> <p><i>Report Issue Date:</i> 22-Feb-2021</p> <p><i>Report ID:</i> 9985-1247-1310-2035</p> <p style="text-align: center; font-size: small;">Verify report at www.vgl.ucdavis.edu/verify</p> |
| <p><i>DOB:</i> 01/24/2021 <i>Sex:</i> Male <i>Breed:</i> Mini-Mid Jerseys</p> | |
| <p><i>Sire:</i></p> <p><i>Reg:</i></p> <p><i>Microchip:</i></p> | <p><i>Dam:</i> HCC ROSES LIL SNOWBALL</p> <p><i>Reg:</i> AMJ1549P</p> <p><i>Microchip:</i></p> |

RESULT

INTERPRETATION

| | |
|---|---|
| MC1R (EXTENSION) | |
| Not Requested | |
| Dun (TYRP1) | |
| Not Requested | |
| Pulmonary Hypoplasia with Anasarca (PHA) | |
| Not Requested | |
| Polled vs. Horned | POLLED. Two copies of the Polled-Friesian molecular marker are present. All offspring will be polled. |
| Pf/Pf | |
| Bulldog Dwarfism (BD1) | Normal, does not have the Dexter BD1 Bulldog mutation. |
| N/N | |
| Bulldog Dwarfism (BD2) | |
| Not Requested | |

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| Name: BBY JONATHAN | |

Additional Information

If testing for a disease or a disorder was performed and results indicate the animal is affected or at risk, we recommend contacting your veterinarian for further clinical evaluation and for additional information on disease and management.

For more detailed information on Dexter Genetic test results, please visit our website at:
www.vgl.ucdavis.edu/services/cattle/dexter-tests

For terms and conditions of testing, please see www.vgl.ucdavis.edu/about/terms-and-conditions

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Report authorized by Dr. Rebecca Bellone, VGL Director

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|---|---------------------|---------------------------|------------------------|
| Provided Information: | | Case: | MJH54 |
| Name: | BBY JONATHAN | Date Received: | 08-Feb-2021 |
| Registration: | | Report Issue Date: | 22-Feb-2021 |
| | | Report ID: | 3423-3307-7536-0035 |
| Verify report at www.vgl.ucdavis.edu/verify | | | |
| DOB: 01/24/2021 Sex: Male Breed: Mini-Mid Jerseys | | | |
| Sire: | | Dam: | HCC ROSES LIL SNOWBALL |
| Reg: | | Reg: | AMJ1549P |
| Microchip: | | Microchip: | |

| Beta Casein Result | Kappa Casein Result | Beta Lactoglobulin Result |
|--------------------|---------------------|---------------------------|
| A2/B | A/B | B/B |

Beta Casein (A2 Genotyping) Interpretation

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

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 Interpretation

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 Interpretation

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.

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| <i>Name:</i> BBY JONATHAN | |

Additional Information

If testing for a disease or a disorder was performed and results indicate the animal is affected or at risk, we recommend contacting your veterinarian for further clinical evaluation and for additional information on disease and management.

For more detailed information on Milk Protein test results, please visit our website at:
www.vgl.ucdavis.edu/panel/cattle-milk-protein-panel

For terms and conditions of testing, please see www.vgl.ucdavis.edu/about/terms-and-conditions

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