**Genome-wide association study provides strong evidence of genes affecting the reproductive performance of Nellore beef cows.** Thaise Pinto de Melo, Gregório Miguel Ferreira de Camargo, Lucia Galvão de Albuquerque, Roberto Carvalheiro\*. \*Corresponding author: Department of Animal Science, School of Agricultural and Veterinarian Sciences, FCAV/ UNESP – Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil; e-mail: rcar@fcav.unesp.br

**S1 Table. Genes harbored in the top20 windows for heifer rebreeding.**

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| --- | --- | --- | --- | --- |
| **BTA** | **Position (Mb)** | **%var** | **Genes** | **GenBank Accession no** |
| 4 | 6-7 | 0.34 | VWC2, LOC101904266, LOC781773 | AC\_000161 GPC\_000000173 |
| 6 | 78-79 | 0.38 | TRNAC-GCA, ADGRL3 | AC\_000163 GPC\_000000175 |
| 6 | 110-111 | 0.36 | SLC2A9, TRNAG-CCC, WDR1, ZNF518B, LOC100335675, CLNK, LOC101905921, TRNAA-UGC | AC\_000163 GPC\_000000175 |
| 10 | 88-89 | 0.35 | TTLL5, TGFB3, IFT43, GPATCH2L, ESRRB, LOC104973251, LOC101903493, LOC104973252 | AC\_000167 GPC\_000000179 |
| 11 | 70-71 | 0.38 | LOC104968430, LOC101905929, ALK, CLIP4, C11H2orf71, FAM179A, TRNAS-GGA, LOC104973418, WDR43, TRMT61B, SPDYA, PPP1CB | AC\_000168 GPC\_000000180 |
| 11 | 71-72 | 0.67 | PLB1, LOC104973420, LOC104973419, LOC104973421, FOSL2a, LOC104973422, BREa, LOC101904887, LOC101904806, RBKSa, MRPL33, SLC4A1AP, LOC101905151 | AC\_000168 GPC\_000000180 |
| **11** | **72-73b** | 0.92 | SLC4A1AP, SUPT7L, GPN1, CCDC121, ZNF512, LOC100141098, GCKR, FNDC4, IFT172a, KRTCAP3, NRBP1, PPM1Ga, ZNF513, SNX17a, EIF2B4, GTF3C2, MPV17, UCNa, TRIM54, DNAJC5G, SLC30A3a, CADa, ATRAID, SLC5A6, TCF23a, PRR30, PREBa, ABHD1, CGREF1, KHK, EMILIN1a, OST4, AGBL5, TRNAA-AGC, TRNAY-GUA, TMEM214, LOC101906001, MAPRE3, DPYSL5, CENPA, SLC35F6, KCNK3, CIB4a, TRNAE-UUC, C11H2orf70, OTOF | AC\_000168 GPC\_000000180 |
| 11 | 73-74 | 0.40 | OTOF, DRC1, EPT1, MIR2284Y-1, GPR113, LOC101906131, HADHB, HADHA, GAREML, LOC104973423, RAB10, LOC104973424, TRNAC-ACA, KIF3C, LOC104973425, LOC783461, ASXL2, DTNB, TRNAC-GCA, LOC100847382, LOC104973427, DNMT3A, MIR1301, LOC104968513 | AC\_000168 GPC\_000000180 |
| 13 | 1-2 | 0.35 | PLCB1, MIR2285M-1, LOC104973687, LOC104973688 | AC\_000170 GPC\_000000182 |
| 14 | 39-40 | 0.48 | STAU2, LOC104974049, MIR2284L, UBE2W, TCEB1, TMEM70, LY96, LOC104974050, LOC101904383, TRNAE-UUC, LOC104974052, LOC104974051, LOC100337130, LOC781682, JPH1, LOC104974056, LOC104974055, LOC104974054, GDAP1, LOC104974053 | AC\_000171 GPC\_000000183 |
| 15 | 51-52 | 0.40 | LOC104974262, OR51E1, OR51D1, TRIM68, OR52I2, LOC618050, LOC510351, LOC784727, LOC784689, OR52K2, LOC617417, OR52K1, OR52M1, LOC618067, LOC521676, LOC618075, TRIM21, LOC518464, LOC785574, LOC100138885, OR52B4, LOC517056, LOC785740, LOC785109, LOC519105, LOC618213, LOC785773, LOC506452, LOC785853, LOC100299115, LOC100298880, LOC782157, LOC784088, LOC619140, LOC785808, LOC788363, LOC519104, LOC100299247, TRNAG-CCC, LOC525033, LOC618173, RRM1, LOC101904526, STIM1 | AC\_000172 GPC\_000000184 |
| **16** | **50-51b** | 0.44 | C16H1orf174, DFFB, CEP104, MIR2320, LOC101906943, LOC104974456, LRRC47, SMIM1, CCDC27, TP73, WRAP73, TPRG1L, MEGF6, MIR551A, ARHGEF16 | AC\_000173 GPC\_000000185 |
| 17 | 49-50 | 1.04 | TMEM132D, LOC101907645, GLT1D1, LOC100140533, TRNAE-UUC, SLC15A4, TMEM132C, LOC101907809, LOC104974623 | AC\_000174 GPC\_000000186 |
| 17 | 65-66 | 0.38 | TRIAP1, GATC, SRSF9, DYNLL1, COQ5, RNF10, POP5, CABP1, MLEC, UNC119B, ACADS, LOC104974683, SPPL3, LOC104974672, HNF1A, LOC104974673, C17H12orf43, OASL, LOC101905682, LOC100296211, ANKRD13A, GIT2, TCHP, GLTP, TRPV4, FAM222A, LOC101903333, LOC104974674, LOC104974675, MVK, MMAB, UBE3B, KCTD10, MYO1H | AC\_000174 GPC\_000000186 |
| **17** | **70-71c** | 0.34 | TTC28, LOC101902902, TRNAE-CUC, CHEK2a, HSCB, LOC104974694, CCDC117, XBP1a, TRNAG-CCC, LOC101903066, LOC104970055, ZNRF3, LOC615587, KREMEN1, LOC104974695, EMID1, RHBDD3, EWSR1, GAS2L1, RASL10A, AP1B1, LOC100847257, NEFH, THOC5, NIPSNAP1 | AC\_000174 GPC\_000000186 |
| 20 | 3-4 | 0.43 | LOC533085, TLX3, TRNAK-UUU, NPM1, FGF18, LOC781186, LOC104975182, LOC104975183, SMIM23, LOC533234, FBXW11, LOC101902681, LOC101903110, STK10, LOC101903680, LOC101903388, LOC100138705, EFCAB9, UBTD2 | AC\_000177 GPC\_000000189 |
| 20 | 14-15 | 0.53 | ADAMTS6, LOC104975223, LOC104975224, CWC27, LOC784354, LOC104975225, SREK1IP1, FAM159B, RGS7BP | AC\_000177 GPC\_000000189 |
| 21 | 42-43 | 0.38 | STRN3, AP4S1, HECTD1, LOC101908185, HEATR5A, DTD2, GPR33, NUBPL, ARHGAP5 | AC\_000178 GPC\_000000190 |
| 26 | 42-43 | 0.33 | ATE1, LOC101907255, LOC104970731, NSMCE4A, TACC2, MIR2396, BTBD16, LOC104970753, LOC104970752, PLEKHA1, HTRA1, LOC100849037, DMBT1, LOC100295703, SPADH2, SPADH1, C26H10orf120, LOC100300910, LOC104968509, LOC617705, LOC104970756, TRNAG-CCC | AC\_000183 GPC\_000000195 |
| 29 | 13-14 | 1.14 | FAM181Ba, LOC783542, TRNAC-GCA, LOC101903586, TRNAC-GCA, LOC104971240 | AC\_000186 GPC\_000000198 |

%var, Additive genetic variance proportion explained by the window.

aGenes associated with reproductive events.

bWindows in bold were in common between the traits heifer rebreeding and number of calvings at 53 months of age.