***Table S1*** *Statistically signiﬁcant (P-value* *≤0.05) MeSH (Medical Subject Headings) terms (ID and Name) for three categories (1-Phenomena and Process, 2-Diseases and 3-Chemical and Drugs), total number of background genes (Background) and number of selected genes (Selected) related to tick resistance in beef cattle.*

|  |
| --- |
| **Phenomena and Process** |
| MeSH Term ID | **MeSH Term Name** | **Background** | **Selected** | ***P-value*** |
| D013075 | Sperm Capacitation | 8 | 3 | 0.0000077 |
| D013081 | Sperm Motility | 18 | 3 | 0.00011 |
| D013499 | Surface Properties | 20 | 3 | 0.00015 |
| D040681 | Structural Homology, Protein | 20 | 3 | 0.00015 |
| D059748 | Proteolysis | 23 | 3 | 0.00023 |
| D004542 | Ejaculation | 8 | 2 | 0.00075 |
| D017434 | Protein Structure, Tertiary | 427 | 8 | 0.0018 |
| D002199 | Capillary Permeability | 17 | 2 | 0.0035 |
| D002463 | Cell Membrane Permeability | 18 | 2 | 0.004 |
| D006570 | Heterochromatin | 1 | 1 | 0.0053 |
| D009119 | Muscle Contraction | 27 | 2 | 0.0088 |
| D015966 | Gene Expression Regulation, Fungal | 2 | 1 | 0.01 |
| D060833 | Cellular Microenvironment | 2 | 1 | 0.01 |
| D054730 | Protein Interaction Domains and Motifs | 31 | 2 | 0.012 |
| D001665 | Binding Sites | 477 | 7 | 0.013 |
| D004795 | Enzyme Stability | 33 | 2 | 0.013 |
| D019175 | DNA Methylation | 35 | 2 | 0.015 |
| D000705 | Anaphase | 3 | 1 | 0.016 |
| D009126 | Muscle Relaxation | 3 | 1 | 0.016 |
| D016193 | G1 Phase | 3 | 1 | 0.016 |
| D019277 | Entropy | 3 | 1 | 0.016 |
| D015536 | Down-Regulation | 104 | 3 | 0.018 |
| D021581 | Active Transport, Cell Nucleus | 40 | 2 | 0.019 |
| D019281 | Dimerization | 111 | 3 | 0.021 |
| D000220 | Adaptation Biological | 4 | 1 | 0.021 |
| D011487 | Protein Conformation | 411 | 6 | 0.021 |
| D055503 | Protein Multimerization | 45 | 2 | 0.023 |
| D017386 | Sequence Homology, Amino Acid | 934 | 10 | 0.025 |
| D016296 | Mutagenesis | 47 | 2 | 0.025 |
| D016880 | Anisotropy | 5 | 1 | 0.026 |
| D017343 | Genes Plant | 5 | 1 | 0.026 |
| D004347 | Drug Interactions | 6 | 1 | 0.031 |
| D009707 | Nucleosomes | 6 | 1 | 0.031 |
| D020413 | 3' Untranslated Regions | 53 | 2 | 0.032 |
| D014162 | Transfection | 341 | 5 | 0.034 |
| D002454 | Cell Differentiation | 138 | 3 | 0.036 |
| D011485 | Protein Binding | 594 | 7 | 0.037 |
| D006239 | Haplotypes | 141 | 3 | 0.038 |
| D009693 | Nucleic Acid Hybridization | 141 | 3 | 0.038 |
| D015854 | Up-Regulation | 141 | 3 | 0.038 |
| D055592 | Biophysical Phenomena | 8 | 1 | 0.041 |
| D011499 | Protein Processing, Post-Translational | 157 | 3 | 0.05 |
| **Diseases**  |
| D014552 | Urinary Tract Infections | 1 | 1 | 0.0053 |
| D009447 | Neuroblastoma | 6 | 1 | 0.031 |
| D002471 | Cell Transformation Neoplastic | 7 | 1 | 0.036 |
| D009361 | Neoplasm Invasiveness | 7 | 1 | 0.036 |
| D003921 | Diabetes Mellitus Experimental | 8 | 1 | 0.041 |
| D011471 | Prostatic Neoplasms | 8 | 1 | 0.041 |
| D006973 | Hypertension | 9 | 1 | 0.046 |
| **Chemical and Drugs** |
| D029584 | Prostatic Secretory Proteins | 7 | 3 | 0.0000049 |
| D029607 | Seminal Vesicle Secretory Proteins | 11 | 3 | 0.0000230 |
| D013078 | Sperm Immobilizing Agents | 2 | 2 | 0.000027 |
| D000949 | Histocompatibility Antigens Class II | 12 | 3 | 0.00003 |
| D055655 | NK Cell Lectin-Like Receptor Subfamily K | 5 | 2 | 0.00027 |
| D006493 | Heparin | 29 | 3 | 0.00047 |
| D005353 | Fibronectins | 34 | 3 | 0.00075 |
| D051548 | Histone Acetyltransferases | 8 | 2 | 0.00075 |
| D053495 | Osteopontin | 9 | 2 | 0.00096 |
| D055607 | Receptors Natural Killer Cell | 10 | 2 | 0.0012 |
| D051176 | beta Catenin | 17 | 2 | 0.0035 |
| D012701 | Serotonin | 18 | 2 | 0.004 |
| D006570 | Heterochromatin | 1 | 1 | 0.0053 |
| D018830 | Adhesins Escherichia coli | 1 | 1 | 0.0053 |
| D036781 | Fimbriae Proteins | 1 | 1 | 0.0053 |
| D053766 | Presenilin-2 | 1 | 1 | 0.0053 |
| D056245 | Mi-2 Nucleosome Remodeling and Deacetylase Complex | 1 | 1 | 0.0053 |
| D065636 | Myotonin-Protein Kinase | 1 | 1 | 0.0053 |
| D000959 | Antihypertensive Agents | 2 | 1 | 0.01 |
| D002794 | Choline | 2 | 1 | 0.01 |
| D009603 | Nitroso Compounds | 2 | 1 | 0.01 |
| D018080 | Receptors GABA-B | 2 | 1 | 0.01 |
| D018744 | DNA Plant | 2 | 1 | 0.01 |
| D018829 | Adhesins Bacterial | 2 | 1 | 0.01 |
| D024461 | Myosin Type I | 2 | 1 | 0.01 |
| D024501 | Nonmuscle Myosin Type IIB | 2 | 1 | 0.01 |
| D050886 | HSP20 Heat-Shock Proteins | 2 | 1 | 0.01 |
| D051037 | Large-Conductance Calcium-Activated Potassium Channel alpha Subunits | 2 | 1 | 0.01 |
| D053499 | Plasma Membrane Calcium-Transporting ATPases | 2 | 1 | 0.01 |
| D054481 | Thioredoxin Reductase 1 | 2 | 1 | 0.01 |
| D059848 | HLA-DQ alpha-Chains | 2 | 1 | 0.01 |
| D060165 | Uroplakins | 2 | 1 | 0.01 |
| D000199 | Actins | 99 | 3 | 0.015 |
| D001619 | beta-N-Acetylhexosaminidases | 3 | 1 | 0.016 |
| D010089 | Oxidoreductases N-Demethylating | 3 | 1 | 0.016 |
| D013311 | Streptozocin | 3 | 1 | 0.016 |
| D018027 | Receptors Glucagon | 3 | 1 | 0.016 |
| D018801 | Antigens CD2 | 3 | 1 | 0.016 |
| D019473 | Transcription Factors TFII | 3 | 1 | 0.016 |
| D020536 | Enzyme Activators | 3 | 1 | 0.016 |
| D050880 | p300-CBP Transcription Factors | 3 | 1 | 0.016 |
| D053498 | Sarcoplasmic Reticulum Calcium-Transporting ATPases | 3 | 1 | 0.016 |
| D054461 | Lim Kinases | 3 | 1 | 0.016 |
| D054462 | p21-Activated Kinases | 3 | 1 | 0.016 |
| D058305 | Sorting Nexins | 3 | 1 | 0.016 |
| D062965 | Cyclic GMP-Dependent Protein Kinase Type I | 3 | 1 | 0.016 |
| D002868 | Chromosomal Proteins Non-Histone | 37 | 2 | 0.016 |
| D014364 | Tryptophan | 40 | 2 | 0.019 |
| D001425 | Bacterial Outer Membrane Proteins | 4 | 1 | 0.021 |
| D002411 | Cation Exchange Resins | 4 | 1 | 0.021 |
| D006683 | HLA-DQ Antigens | 4 | 1 | 0.021 |
| D010767 | Phosphorylcholine | 4 | 1 | 0.021 |
| D011484 | Protein-Arginine N-Methyltransferases | 4 | 1 | 0.021 |
| D011495 | Histone-Lysine N-Methyltransferase | 4 | 1 | 0.021 |
| D013113 | Spin Labels | 4 | 1 | 0.021 |
| D015060 | 12-Dipalmitoylphosphatidylcholine | 4 | 1 | 0.021 |
| D020559 | Monomeric GTP-Binding Proteins | 4 | 1 | 0.021 |
| D029702 | Schizosaccharomyces pombe Proteins | 4 | 1 | 0.021 |
| D044346 | Receptor Serotonin 5-HT1D | 4 | 1 | 0.021 |
| D051135 | Rad51 Recombinase | 4 | 1 | 0.021 |
| D051357 | Cyclin-Dependent Kinase 2 | 4 | 1 | 0.021 |
| D053835 | Unilamellar Liposomes | 4 | 1 | 0.021 |
| D060167 | Uroplakin Ia | 4 | 1 | 0.021 |
| D060170 | Uroplakin II | 4 | 1 | 0.021 |
| D011971 | Receptors Immunologic | 44 | 2 | 0.022 |
| D003497 | Cyclic N-Oxides | 5 | 1 | 0.026 |
| D005780 | Gelatin | 5 | 1 | 0.026 |
| D012319 | RNA Polymerase II | 5 | 1 | 0.026 |
| D044302 | Receptor Serotonin 5-HT1B | 5 | 1 | 0.026 |
| D058829 | Serotonin 5-HT1 Receptor Antagonists | 5 | 1 | 0.026 |
| D060169 | Uroplakin Ib | 5 | 1 | 0.026 |
| D060171 | Uroplakin III | 5 | 1 | 0.026 |
| D018160 | Receptors Cytoplasmic and Nuclear | 48 | 2 | 0.026 |
| D001120 | Arginine | 52 | 2 | 0.031 |
| D001896 | Boron Compounds | 6 | 1 | 0.031 |
| D001905 | Botulinum Toxins | 6 | 1 | 0.031 |
| D004134 | Dimyristoylphosphatidylcholine | 6 | 1 | 0.031 |
| D005690 | Galactose | 6 | 1 | 0.031 |
| D009707 | Nucleosomes | 6 | 1 | 0.031 |
| D009712 | Nucleotides Cyclic | 6 | 1 | 0.031 |
| D029742 | Caenorhabditis elegans Proteins | 6 | 1 | 0.031 |
| D050993 | GATA6 Transcription Factor | 6 | 1 | 0.031 |
| D051036 | Large-Conductance Calcium-Activated Potassium Channels | 6 | 1 | 0.031 |
| D020413 | 3' Untranslated Regions | 53 | 2 | 0.032 |
| D011993 | Recombinant Fusion Proteins | 230 | 4 | 0.033 |
| D005680 | gamma-Aminobutyric Acid | 7 | 1 | 0.036 |
| D006596 | Hexosaminidases | 7 | 1 | 0.036 |
| D008244 | Lysophosphatidylcholines | 7 | 1 | 0.036 |
| D017228 | Hepatocyte Growth Factor | 7 | 1 | 0.036 |
| D024681 | Potassium Channels Calcium-Activated | 7 | 1 | 0.036 |
| D056484 | Jumonji Domain-Containing Histone Demethylases | 7 | 1 | 0.036 |
| D019950 | Mitogen-Activated Protein Kinase 1 | 60 | 2 | 0.04 |
| D003094 | Collagen | 61 | 2 | 0.041 |
| D005982 | Glutathione Transferase | 61 | 2 | 0.041 |
| D011994 | Recombinant Proteins | 481 | 6 | 0.041 |
| D000118 | Acetylglucosaminidase | 8 | 1 | 0.041 |
| D000185 | Actinin | 8 | 1 | 0.041 |
| D004269 | DNA Bacterial | 8 | 1 | 0.041 |
| D008358 | Mannose | 8 | 1 | 0.041 |
| D010715 | Phosphatidylglycerols | 8 | 1 | 0.041 |
| D011288 | Prekallikrein | 8 | 1 | 0.041 |
| D013439 | Sulfhydryl Reagents | 8 | 1 | 0.041 |
| D015096 | 3-Hydroxysteroid Dehydrogenases | 8 | 1 | 0.041 |
| D019086 | Bicyclo Compounds Heterocyclic | 8 | 1 | 0.041 |
| D036002 | ADP Ribose Transferases | 8 | 1 | 0.041 |
| D054339 | Steroidogenic Factor 1 | 8 | 1 | 0.041 |
| D054464 | Peroxiredoxins | 8 | 1 | 0.041 |
| D002918 | Chymotrypsin | 63 | 2 | 0.043 |
| D018797 | Cell Cycle Proteins | 63 | 2 | 0.043 |
| D048868 | Adaptor Proteins Signal Transducing | 63 | 2 | 0.043 |
| D011494 | Protein Kinases | 65 | 2 | 0.046 |
| D004265 | DNA Helicases | 9 | 1 | 0.046 |
| D010959 | Tissue Plasminogen Activator | 9 | 1 | 0.046 |
| D016159 | Tumor Suppressor Protein p53 | 9 | 1 | 0.046 |
| D017869 | Cyclic GMP-Dependent Protein Kinases | 9 | 1 | 0.046 |
| D020030 | Nitric Oxide Donors | 9 | 1 | 0.046 |
| D043263 | Myosin-Light-Chain Phosphatase | 9 | 1 | 0.046 |
| D055293 | Receptors Urokinase Plasminogen Activator | 9 | 1 | 0.046 |