**S1 Table**. Primers for semi-quantitative PCR, quantitative PCR and allele-specific PCR

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| Primer names | Sequences | Purposes |
| *dvl1a*-F*dvl1a*-R | 5′-GGGTTCAAAAATCTGTGGAG-3′5′-GTGAAGCGATGTGAATACTTT-3′ | Genomic and allele-specific PCR (Difference in size between WT and mutant allele) |
| *dvl1b*-F1*dvl1b*-F2*dvl1b*-R | 5′-CTTTCGGATATGACACTGCC-3′5′-AACACAGGCAGCAAAACCTC-3′5′-GCCATCAATGACAGCTTCG-3′ | Genomic PCR |
| *dvl2*-F1*dvl2*-F2*dvl2*-R | 5′-CGACATTGTCCAAGAGAGC-3′5′-TTGTGGTCTAGACGACTTTCC-3′5′-TGCGATGATGGCTTGATACG-3′ | Genomic PCR |
| *dvl3a*-F1*dvl3a*-F2*dvl3a*-R | 5′-TACGGTTGATAGCCATCCAG-3′5′-AAGATTCCTGGGAACTCCG-3′5′-GGACCAAACATTCACCCCTG-3′ | Genomic PCR |
| *dvl3*-F1*dvl3*-F2*dvl3*-R  | 5′-CGAAATGAATCCCATCCA-3′5′-ACGTACTTACGACAGCAAGG-3′5′-GGGTTTCCATGTAAAACGC-3′ | Genomic PCR |
| *dvl1b*(mut)-F*dvl1b*(wt)-F | 5′-CAACCGACCGGTATAAATTC-3′5′-GCAACCGACCGGTCAACAGC-3′ | Allele-specific PCR (Used with *dvl1b*-R) |
| *dvl2*(mut)-R*dvl2*(wt)-R | 5′-CACAATCACTTACCCCCTGG-3′5′-CAATCACTTACCCGAAGTCC-3′ | Allele-specific PCR (Used with *dvl2*-F1, *dvl2*-F2) |
| *dvl3a*(mut)-F*dvl3a*(wt)-F | 5′-CAAGAAACCAAATTACAATC-3′5′-AACCAAATTACAAGTTTTTC-3′ | Allele-specific PCR (Used with *dvl3a*-F1, *dvl3a*-F2) |
| *dvl3*(mut)-F*dvl3*(wt)-F | 5′-CCTTAATAAACCCAACTAAT-3′5′-TTAATAAACCCAACTACAAA-3′ | Allele-specific PCR (Used with *dvl3*-R) |
| *dvl2*-F*dvl2*-R | 5′-ATTGGAGACTCCAGACCTCCT-3′5′-AGCTACAGCTCCTCCCTTCAT-3′ | RT-PCR |
| *dvl3a*-F*dvl3a*-R | 5′-CTCCGATCTCAACAAGCGAG-3′5′-AACATCCATCTGAGTGGGAGC-3′ | RT-PCR |
| *dvl1a*-F*dvl1a*-R | 5′-ACATGGCTTCTCTCAATCTG-3′5′-TGTGAAAACTGTGGCAGGGA-3′ | qPCR |
| *dvl1b*-F*dvl1b*-R | 5′-CTGTTCTCCGGCAATTGTTC-3′5′-GGTTGCTGAGGACATTTTTG-3′ | qPCR |
| *dvl3*-F*dvl3*-R | 5′-AGTCGAAGCAGCGGCTCTAA-3′5′-ATGCTGCGGATGGTGTGTGA-3′ | qPCR |
| *ß-actin*-F*ß-actin*-R | 5′-CACAGTGCTGTCTGGAGGTAC-3′5′-GAGGGCAAAGTGGTAAACG-3′ | RT-PCR and qPCR |