(1) The wildtype sequence is listed first with the deleted sequences in the ptch1-3 allele marked in red. The mutant sequence is listed second with the inserted bases in green.

ptch+

5’GCAGGCTAAGGATAAGCCTAATCCGTCCACGCTGAGCATAGCTGTTCCCGGTTCAATTCTCGAGAATGCCCAATCCAACGAGCTGCGGGCCTACGTGGCCGGTCAAATAGCCCGGGCCGCCTGCATCTTTCGGGTGAACGAGGTAATCGTCTTCGACGACGTGGGTATAGCCACCGCCCGGGAAACAAAGCGTAGTTACGAGGCAGATGGGGAAGGCAGCAGCACTGGCACTGTGCGCAGCAGCTCATTACAACTGGCACGCATATTGCAGTATCTGGAATGCCCGCAGTATCTCCGAAAATACTTCTTCCCGCTGCACAAAGACCTTAAGTACTCTGGCTTGCTGAATCCATTGGACACACCGCACCATCTCCGTCAACAGAGCAAATTCAGGTATCGTGAGGGCGTCATTTGCGACAAGAAGGCCAAGGAGGGACACAGCTACGCCAACGTGGGGCTGCTTAACGACGTTTTGGTTGACAAGGCAATAGAACCAGGCGTCAGAGTAACTGTAAAAATGGAACCTCAAAGTGGTAGGCATTTAAATCGAACATTTGTGCTCCCAGTGCCGAACTAATGAACTATTCGTCCTAACAGAGAGCTGTAGAAAGCAGCGGGGAACACTAGTTAGCCCGGATGAACCACGTCGGGAAACAGGTGTTTATTGGGGCTACCAGGTGCGCATCGCACACTCCATGTCTGAGATTTTTACCAAATCACCCTACGCAACCGGCTACGATGTTACGGTGGGTACCTCGGATCGCGGAACCAACGTACATGAGGTGCCCAACCGATCATATAACTTTAATCACATGCTCATTGTATTTGGCGGACTGCAAGGCTTGGAATCTGCCTTGGCCAACGACGAGAAACTGACCGTAGATGATCCTGAGCTGCTGTTCGACCACTATGTAAATGTTTTACCACGCCAAGGATCTCGAACCATTCGCACCGAGGAAGCGCTGTTGATTGCTTTAGCGGCTCTCCAGGAGAAACTGCAACCGCAAGTGGCTGAT

ptch1-3

5’GCAGGCTAAGGATAAGCCTAATCCGTCCACAGCAGGAGAAACTGCAACCGCAAGTGGCTGAT

(2) The wildtype sequence is listed first with the deleted sequences in the ptch7-7 allele marked in red. The mutant sequence is listed second with the inserted bases in green.

ptch+

5’CGAGGAAGCGCTGTTGATTGCTTTAGCGGCTCTCCAGGAGAAACTGCAACCGCAAGTGGCTGAT

ptch7-7

5’CGAGGAAGCGCTGTTGATTGCTTTAGCGGCGAAACTAAACAGGAGAAACTGCAACCGCAAGTGGCTGAT

(3) The wildtype sequence is listed first with the deleted sequences in the ptch12-2 allele marked in red. The mutant sequence is listed second.

ptch+

5’CGAGGAAGCGCTGTTGATTGCTTTAGCGGCTCTCCAGGAGAAACTGCAACCGCAAGTGGCTGAT

Ptch12-2

5’CGAGGAAGCGCTGTTGATTGCTTTAGCGGCTCCAGGAGAAACTGCAACCGCAAGTGGCTGAT