This version of my work *actually* contains the SNPs of SARS-CoV-2 from South Carolina to the SARS-CoV-1 reference sequence. The work contained in jpl2\_assignment5\_pre.tar.gz can be found in the covid2SARS-CoV-1 folder.

The total number of sequences used in the analysis reported on here was 194 sequences of SARS-CoV-2, accounted for by 193 sequences from South Carolina, USA and the reference sequence from Wuhan, China. The accession number is NC\_045512.2 for this reference genome. Using the program included in the submission, I was able to identify 1063 SNPs. There are three versions of the program included: clustalOmegaMSA.py will simply just run Clustal Omega on the given input .fasta file, alnSNPAnalysis.py will identify the SNPs in the provided .aln file, and clustalOmegaSNPAnalysis.py combines both of these operations into one single program. The execution of the last of these programs on the 194 sequences took 15245.835067272186 seconds, or approximately 4 hours and 14 minutes. The results shown in the table below are identical to that in the CSV file.

|  |  |  |  |
| --- | --- | --- | --- |
| Location | Reference Base | Mutation Base | Percent of Mutation |
| 1 | A | - | 89.11917098445595 |
| 2 | T | - | 89.11917098445595 |
| 3 | T | - | 87.56476683937824 |
| 4 | A | - | 87.04663212435233 |
| 5 | A | - | 84.97409326424871 |
| 6 | A | - | 83.41968911917098 |
| 7 | G | - | 83.41968911917098 |
| 8 | G | - | 82.90155440414507 |
| 9 | T | - | 82.90155440414507 |
| 10 | T | - | 81.86528497409327 |
| 11 | T | - | 78.75647668393782 |
| 12 | A | - | 75.64766839378238 |
| 13 | T | - | 72.02072538860104 |
| 14 | A | - | 69.43005181347151 |
| 15 | C | - | 69.43005181347151 |
| 16 | C | - | 69.43005181347151 |
| 17 | T | - | 66.83937823834198 |
| 18 | T | - | 64.24870466321244 |
| 19 | C | - | 64.24870466321244 |
| 20 | C | - | 63.730569948186535 |
| 21 | C | - | 63.730569948186535 |
| 22 | A | - | 63.212435233160626 |
| 23 | G | - | 63.212435233160626 |
| 24 | G | - | 63.212435233160626 |
| 25 | T | - | 63.212435233160626 |
| 26 | A | - | 63.212435233160626 |
| 27 | A | - | 62.69430051813472 |
| 28 | C | - | 62.69430051813472 |
| 29 | A | - | 62.69430051813472 |
| 30 | A | - | 62.69430051813472 |
| 31 | A | - | 61.6580310880829 |
| 32 | C | - | 61.6580310880829 |
| 33 | C | - | 61.6580310880829 |
| 34 | A | - | 61.6580310880829 |
| 35 | A | - | 61.13989637305699 |
| 36 | C | - | 60.10362694300518 |
| 37 | C | - | 59.58549222797927 |
| 38 | A | - | 58.549222797927456 |
| 39 | A | - | 21.761658031088082 |
| 40 | C | - | 16.06217616580311 |
| 41 | T | - | 15.025906735751295 |
| 42 | T | - | 15.025906735751295 |
| 43 | T | - | 13.989637305699482 |
| 44 | C | - | 13.471502590673575 |
| 45 | G | - | 12.953367875647666 |
| 46 | A | - | 12.953367875647666 |
| 47 | T | - | 12.953367875647666 |
| 48 | C | - | 12.435233160621761 |
| 49 | T | - | 11.917098445595855 |
| 50 | C | - | 9.844559585492227 |
| 51 | T | - | 9.844559585492227 |
| 52 | T | - | 9.844559585492227 |
| 53 | G | - | 9.844559585492227 |
| 54 | T | - | 9.844559585492227 |
| 241 | C | T | 88.08290155440415 |
| 490 | T | A | 11.398963730569948 |
| 745 | C | T | 5.699481865284974 |
| 1059 | C | T | 52.331606217616574 |
| 3037 | C | T | 88.08290155440415 |
| 3177 | C | T | 11.398963730569948 |
| 3722 | A | G | 5.181347150259067 |
| 4511 | G | A | 14.507772020725387 |
| 7153 | T | C | 6.7357512953367875 |
| 8652 | T | N | 5.181347150259067 |
| 8653 | G | N | 5.181347150259067 |
| 8654 | T | N | 5.699481865284974 |
| 8655 | C | N | 5.699481865284974 |
| 8656 | T | N | 6.217616580310881 |
| 8657 | A | N | 6.217616580310881 |
| 8658 | A | N | 6.217616580310881 |
| 8659 | A | N | 6.217616580310881 |
| 8660 | C | N | 6.217616580310881 |
| 8661 | A | N | 6.217616580310881 |
| 8662 | T | N | 10.880829015544041 |
| 8663 | A | N | 11.398963730569948 |
| 8664 | C | N | 11.398963730569948 |
| 8665 | T | N | 11.398963730569948 |
| 8666 | G | N | 11.398963730569948 |
| 8667 | A | N | 11.398963730569948 |
| 8668 | C | N | 11.398963730569948 |
| 8669 | T | N | 11.917098445595855 |
| 8670 | T | N | 11.398963730569948 |
| 8671 | T | N | 11.398963730569948 |
| 8672 | T | N | 11.398963730569948 |
| 8673 | C | N | 11.398963730569948 |
| 8674 | A | N | 11.398963730569948 |
| 8675 | A | N | 11.398963730569948 |
| 8676 | G | N | 11.398963730569948 |
| 8677 | T | N | 11.398963730569948 |
| 8678 | G | N | 11.398963730569948 |
| 8679 | A | N | 11.398963730569948 |
| 8680 | A | N | 11.398963730569948 |
| 8681 | A | N | 11.398963730569948 |
| 8682 | T | N | 11.398963730569948 |
| 8683 | C | N | 11.398963730569948 |
| 8684 | A | N | 11.398963730569948 |
| 8685 | T | N | 11.398963730569948 |
| 8686 | A | N | 11.398963730569948 |
| 8687 | G | N | 11.398963730569948 |
| 8688 | G | N | 11.398963730569948 |
| 8689 | A | N | 11.398963730569948 |
| 8690 | T | N | 11.398963730569948 |
| 8691 | A | N | 11.398963730569948 |
| 8692 | C | N | 11.398963730569948 |
| 8693 | A | N | 11.398963730569948 |
| 8694 | A | N | 11.398963730569948 |
| 8695 | G | N | 11.398963730569948 |
| 8696 | G | N | 11.398963730569948 |
| 8697 | C | N | 11.398963730569948 |
| 8698 | T | N | 11.398963730569948 |
| 8699 | A | N | 11.398963730569948 |
| 8700 | T | N | 11.398963730569948 |
| 8701 | T | N | 11.398963730569948 |
| 8702 | G | N | 11.398963730569948 |
| 8703 | A | N | 11.398963730569948 |
| 8704 | T | N | 11.398963730569948 |
| 8705 | G | N | 11.398963730569948 |
| 8706 | G | N | 11.398963730569948 |
| 8707 | T | N | 11.398963730569948 |
| 8708 | G | N | 11.398963730569948 |
| 8709 | G | N | 11.398963730569948 |
| 8710 | T | N | 11.398963730569948 |
| 8711 | G | N | 11.398963730569948 |
| 8712 | T | N | 11.398963730569948 |
| 8713 | C | N | 11.398963730569948 |
| 8714 | A | N | 11.398963730569948 |
| 8715 | C | N | 11.398963730569948 |
| 8716 | T | N | 11.398963730569948 |
| 8717 | C | N | 11.398963730569948 |
| 8718 | G | N | 11.398963730569948 |
| 8719 | T | N | 10.362694300518134 |
| 8720 | G | N | 10.362694300518134 |
| 8721 | A | N | 9.844559585492227 |
| 8722 | C | N | 9.844559585492227 |
| 8723 | A | N | 9.844559585492227 |
| 8724 | T | N | 9.844559585492227 |
| 8725 | A | N | 9.844559585492227 |
| 8726 | G | N | 9.844559585492227 |
| 8727 | C | N | 9.32642487046632 |
| 8728 | A | N | 9.32642487046632 |
| 8729 | T | N | 9.32642487046632 |
| 8730 | C | N | 9.32642487046632 |
| 8731 | T | N | 9.32642487046632 |
| 8732 | A | N | 9.32642487046632 |
| 8733 | C | N | 9.32642487046632 |
| 8734 | A | N | 9.32642487046632 |
| 8735 | G | N | 9.32642487046632 |
| 8736 | A | N | 9.32642487046632 |
| 8737 | T | N | 9.32642487046632 |
| 8738 | A | N | 9.32642487046632 |
| 8739 | C | N | 9.32642487046632 |
| 8740 | T | N | 9.32642487046632 |
| 8741 | T | N | 9.844559585492227 |
| 8742 | G | N | 9.844559585492227 |
| 8743 | T | N | 9.844559585492227 |
| 8744 | T | N | 10.362694300518134 |
| 8745 | T | N | 10.362694300518134 |
| 8746 | T | N | 9.844559585492227 |
| 8747 | G | N | 9.844559585492227 |
| 8748 | C | N | 9.844559585492227 |
| 8749 | T | N | 9.844559585492227 |
| 8750 | A | N | 9.844559585492227 |
| 8751 | A | N | 9.844559585492227 |
| 8752 | C | N | 9.844559585492227 |
| 8753 | A | N | 9.844559585492227 |
| 8754 | A | N | 9.844559585492227 |
| 8755 | A | N | 9.844559585492227 |
| 8756 | C | N | 9.844559585492227 |
| 8757 | A | N | 9.844559585492227 |
| 8758 | T | N | 9.844559585492227 |
| 8759 | G | N | 9.844559585492227 |
| 8760 | C | N | 9.844559585492227 |
| 8761 | T | N | 9.844559585492227 |
| 8762 | G | N | 9.844559585492227 |
| 8763 | A | N | 9.844559585492227 |
| 8764 | T | N | 9.844559585492227 |
| 8765 | T | N | 9.844559585492227 |
| 8766 | T | N | 9.844559585492227 |
| 8767 | T | N | 9.844559585492227 |
| 8768 | G | N | 9.844559585492227 |
| 8769 | A | N | 9.32642487046632 |
| 8770 | C | N | 9.32642487046632 |
| 8771 | A | N | 9.844559585492227 |
| 8772 | C | N | 9.844559585492227 |
| 8773 | A | N | 9.844559585492227 |
| 8774 | T | N | 9.844559585492227 |
| 8775 | G | N | 9.844559585492227 |
| 8776 | G | N | 9.844559585492227 |
| 8777 | T | N | 9.844559585492227 |
| 8778 | T | N | 9.844559585492227 |
| 8779 | T | N | 9.844559585492227 |
| 8780 | A | N | 9.844559585492227 |
| 8781 | G | N | 9.844559585492227 |
| 8782 | C | T | 9.844559585492227 |
| 8782 | C | N | 9.844559585492227 |
| 8783 | C | N | 9.32642487046632 |
| 8784 | A | N | 9.844559585492227 |
| 8785 | G | N | 9.844559585492227 |
| 8786 | C | N | 9.844559585492227 |
| 8787 | G | N | 9.844559585492227 |
| 8788 | T | N | 9.844559585492227 |
| 8789 | G | N | 9.844559585492227 |
| 8790 | G | N | 9.844559585492227 |
| 8791 | T | N | 10.362694300518134 |
| 8792 | G | N | 10.362694300518134 |
| 8793 | G | N | 10.362694300518134 |
| 8794 | T | N | 9.844559585492227 |
| 8795 | A | N | 9.844559585492227 |
| 8796 | G | N | 9.844559585492227 |
| 8797 | T | N | 9.844559585492227 |
| 8798 | T | N | 9.844559585492227 |
| 8799 | A | N | 9.844559585492227 |
| 8800 | T | N | 9.844559585492227 |
| 8801 | A | N | 9.844559585492227 |
| 8802 | C | N | 9.844559585492227 |
| 8803 | T | N | 9.844559585492227 |
| 8804 | A | N | 9.844559585492227 |
| 8805 | A | N | 9.844559585492227 |
| 8806 | T | N | 9.844559585492227 |
| 8807 | G | N | 9.844559585492227 |
| 8808 | A | N | 9.844559585492227 |
| 8809 | C | N | 9.844559585492227 |
| 8810 | A | N | 9.844559585492227 |
| 8811 | A | N | 9.844559585492227 |
| 8812 | A | N | 9.844559585492227 |
| 8813 | G | N | 9.844559585492227 |
| 8814 | C | N | 9.844559585492227 |
| 8815 | T | N | 9.844559585492227 |
| 8816 | T | N | 9.844559585492227 |
| 8817 | G | N | 9.844559585492227 |
| 8818 | C | N | 9.844559585492227 |
| 8819 | C | N | 9.844559585492227 |
| 8820 | C | N | 9.844559585492227 |
| 8821 | A | N | 9.844559585492227 |
| 8822 | T | N | 9.844559585492227 |
| 8823 | T | N | 9.844559585492227 |
| 8824 | G | N | 9.844559585492227 |
| 8825 | A | N | 9.844559585492227 |
| 8826 | T | N | 9.844559585492227 |
| 8827 | T | N | 9.844559585492227 |
| 8828 | G | N | 9.844559585492227 |
| 8829 | C | N | 9.844559585492227 |
| 8830 | T | N | 9.844559585492227 |
| 8831 | G | N | 9.844559585492227 |
| 8832 | C | N | 9.844559585492227 |
| 8833 | A | N | 9.844559585492227 |
| 8834 | G | N | 9.844559585492227 |
| 8835 | T | N | 9.844559585492227 |
| 8836 | C | N | 9.844559585492227 |
| 8837 | A | N | 9.844559585492227 |
| 8838 | T | N | 9.844559585492227 |
| 8839 | A | N | 9.844559585492227 |
| 8840 | A | N | 9.844559585492227 |
| 8841 | C | N | 9.844559585492227 |
| 8842 | A | N | 9.844559585492227 |
| 8843 | A | N | 9.844559585492227 |
| 8844 | G | N | 9.844559585492227 |
| 8845 | A | N | 9.844559585492227 |
| 8846 | G | N | 9.844559585492227 |
| 8847 | A | N | 9.844559585492227 |
| 8848 | A | N | 9.844559585492227 |
| 8849 | G | N | 9.844559585492227 |
| 8850 | T | N | 9.844559585492227 |
| 8851 | G | N | 9.844559585492227 |
| 8852 | G | N | 9.844559585492227 |
| 8853 | G | N | 9.844559585492227 |
| 8854 | T | N | 9.32642487046632 |
| 8855 | T | N | 9.32642487046632 |
| 8856 | T | N | 9.844559585492227 |
| 8857 | T | N | 9.844559585492227 |
| 8858 | G | N | 9.844559585492227 |
| 8859 | T | N | 9.844559585492227 |
| 8860 | C | N | 9.844559585492227 |
| 8861 | G | N | 9.844559585492227 |
| 8862 | T | N | 9.844559585492227 |
| 8863 | G | N | 9.844559585492227 |
| 8864 | C | N | 9.844559585492227 |
| 8865 | C | N | 9.844559585492227 |
| 8866 | T | N | 9.844559585492227 |
| 8867 | G | N | 9.844559585492227 |
| 8868 | G | N | 9.844559585492227 |
| 8869 | T | N | 9.844559585492227 |
| 8870 | T | N | 9.844559585492227 |
| 8871 | T | N | 9.844559585492227 |
| 8872 | G | N | 9.844559585492227 |
| 8873 | C | N | 9.844559585492227 |
| 8874 | C | N | 9.844559585492227 |
| 8875 | T | N | 9.844559585492227 |
| 8876 | G | N | 9.844559585492227 |
| 8877 | G | N | 9.844559585492227 |
| 8878 | C | N | 9.844559585492227 |
| 8879 | A | N | 9.844559585492227 |
| 8880 | C | N | 9.844559585492227 |
| 8881 | G | N | 9.844559585492227 |
| 8882 | A | N | 9.844559585492227 |
| 8883 | T | N | 9.844559585492227 |
| 8884 | A | N | 9.844559585492227 |
| 8885 | T | N | 9.844559585492227 |
| 8886 | T | N | 9.844559585492227 |
| 8887 | A | N | 9.844559585492227 |
| 8888 | C | N | 9.844559585492227 |
| 8889 | G | N | 9.844559585492227 |
| 8890 | C | N | 9.844559585492227 |
| 8891 | A | N | 9.844559585492227 |
| 8892 | C | N | 9.844559585492227 |
| 8893 | A | N | 10.362694300518134 |
| 10376 | C | T | 23.316062176165804 |
| 11417 | G | T | 5.181347150259067 |
| 11916 | C | T | 18.65284974093264 |
| 13806 | T | C | 22.797927461139896 |
| 14024 | T | N | 5.181347150259067 |
| 14025 | G | N | 5.181347150259067 |
| 14026 | A | N | 5.181347150259067 |
| 14027 | T | N | 5.181347150259067 |
| 14028 | A | N | 5.181347150259067 |
| 14029 | A | N | 5.181347150259067 |
| 14030 | A | N | 5.181347150259067 |
| 14031 | G | N | 5.181347150259067 |
| 14032 | T | N | 5.181347150259067 |
| 14033 | A | N | 5.181347150259067 |
| 14034 | G | N | 5.181347150259067 |
| 14035 | C | N | 5.181347150259067 |
| 14036 | T | N | 5.181347150259067 |
| 14037 | G | N | 5.181347150259067 |
| 14038 | G | N | 5.181347150259067 |
| 14039 | T | N | 5.181347150259067 |
| 14040 | T | N | 5.181347150259067 |
| 14041 | T | N | 5.181347150259067 |
| 14042 | T | N | 5.181347150259067 |
| 14043 | G | N | 5.181347150259067 |
| 14044 | C | N | 5.181347150259067 |
| 14045 | T | N | 5.181347150259067 |
| 14046 | A | N | 5.181347150259067 |
| 14047 | A | N | 5.181347150259067 |
| 14048 | A | N | 5.181347150259067 |
| 14049 | T | N | 5.181347150259067 |
| 14050 | T | N | 5.181347150259067 |
| 14051 | C | N | 5.181347150259067 |
| 14052 | C | N | 5.181347150259067 |
| 14053 | T | N | 5.181347150259067 |
| 14054 | A | N | 5.181347150259067 |
| 14055 | A | N | 5.181347150259067 |
| 14056 | A | N | 5.181347150259067 |
| 14057 | A | N | 5.181347150259067 |
| 14058 | A | N | 5.181347150259067 |
| 14059 | C | N | 5.181347150259067 |
| 14060 | T | N | 5.181347150259067 |
| 14061 | A | N | 5.181347150259067 |
| 14062 | A | N | 5.181347150259067 |
| 14063 | T | N | 5.181347150259067 |
| 14064 | T | N | 5.181347150259067 |
| 14065 | G | N | 5.181347150259067 |
| 14066 | T | N | 5.181347150259067 |
| 14067 | T | N | 5.181347150259067 |
| 14068 | G | N | 5.181347150259067 |
| 14069 | T | N | 5.181347150259067 |
| 14070 | C | N | 5.181347150259067 |
| 14071 | G | N | 5.181347150259067 |
| 14072 | C | N | 5.181347150259067 |
| 14073 | T | N | 5.181347150259067 |
| 14875 | C | T | 88.60103626943005 |
| 16816 | C | T | 21.243523316062177 |
| 16840 | A | C | 6.7357512953367875 |
| 17306 | A | G | 11.398963730569948 |
| 18143 | C | T | 11.398963730569948 |
| 18680 | G | T | 5.181347150259067 |
| 19203 | T | C | 10.362694300518134 |
| 19465 | C | T | 17.616580310880828 |
| 19759 | G | N | 5.181347150259067 |
| 19760 | T | N | 6.217616580310881 |
| 19761 | T | N | 6.217616580310881 |
| 19762 | T | N | 6.217616580310881 |
| 19763 | G | N | 6.217616580310881 |
| 19764 | T | N | 6.217616580310881 |
| 19765 | A | N | 7.253886010362693 |
| 19766 | T | N | 7.253886010362693 |
| 19767 | G | N | 7.253886010362693 |
| 19768 | T | N | 7.253886010362693 |
| 19769 | A | N | 7.253886010362693 |
| 19770 | A | N | 7.253886010362693 |
| 19771 | A | N | 7.253886010362693 |
| 19772 | T | N | 7.253886010362693 |
| 19773 | A | N | 7.253886010362693 |
| 19774 | A | N | 7.253886010362693 |
| 19775 | A | N | 7.253886010362693 |
| 19776 | C | N | 7.253886010362693 |
| 19777 | A | N | 7.253886010362693 |
| 19778 | T | N | 7.253886010362693 |
| 19779 | G | N | 6.7357512953367875 |
| 19780 | C | N | 6.7357512953367875 |
| 19781 | A | N | 6.7357512953367875 |
| 19782 | T | N | 6.7357512953367875 |
| 19783 | T | N | 6.7357512953367875 |
| 19784 | C | N | 6.7357512953367875 |
| 19785 | C | N | 6.7357512953367875 |
| 19786 | A | N | 6.7357512953367875 |
| 19787 | C | N | 6.7357512953367875 |
| 19788 | A | N | 6.7357512953367875 |
| 19789 | C | N | 6.7357512953367875 |
| 19790 | A | N | 7.253886010362693 |
| 19791 | C | N | 7.253886010362693 |
| 19792 | C | N | 7.253886010362693 |
| 19793 | A | N | 7.253886010362693 |
| 19794 | G | N | 7.253886010362693 |
| 19795 | C | N | 7.253886010362693 |
| 19796 | T | N | 7.253886010362693 |
| 19797 | T | N | 7.253886010362693 |
| 19798 | T | N | 7.253886010362693 |
| 19799 | T | N | 7.253886010362693 |
| 19800 | G | N | 7.253886010362693 |
| 19801 | A | N | 7.253886010362693 |
| 19802 | T | N | 7.253886010362693 |
| 19803 | A | N | 7.253886010362693 |
| 19804 | A | N | 7.253886010362693 |
| 19805 | A | N | 7.253886010362693 |
| 19806 | A | N | 7.253886010362693 |
| 19807 | G | N | 7.253886010362693 |
| 19808 | T | N | 7.253886010362693 |
| 19809 | G | N | 7.253886010362693 |
| 19810 | C | N | 7.253886010362693 |
| 19811 | T | N | 7.253886010362693 |
| 19812 | T | N | 7.253886010362693 |
| 19813 | T | N | 7.253886010362693 |
| 19814 | T | N | 7.253886010362693 |
| 19815 | G | N | 7.253886010362693 |
| 19816 | T | N | 7.253886010362693 |
| 19817 | T | N | 7.253886010362693 |
| 19818 | A | N | 7.253886010362693 |
| 19819 | A | N | 7.253886010362693 |
| 19820 | T | N | 7.253886010362693 |
| 19821 | T | N | 7.253886010362693 |
| 19822 | T | N | 7.253886010362693 |
| 19823 | A | N | 7.253886010362693 |
| 19824 | A | N | 7.253886010362693 |
| 19825 | A | N | 7.253886010362693 |
| 19826 | A | N | 7.253886010362693 |
| 19827 | C | N | 6.7357512953367875 |
| 19828 | A | N | 6.7357512953367875 |
| 19829 | A | N | 6.7357512953367875 |
| 19830 | T | N | 6.7357512953367875 |
| 19831 | T | N | 6.7357512953367875 |
| 19832 | A | N | 6.7357512953367875 |
| 19833 | C | N | 6.217616580310881 |
| 19834 | C | N | 6.217616580310881 |
| 19835 | A | N | 6.217616580310881 |
| 19836 | T | N | 7.253886010362693 |
| 19837 | T | N | 7.253886010362693 |
| 19838 | T | N | 6.7357512953367875 |
| 19839 | T | N | 6.217616580310881 |
| 19840 | T | N | 6.217616580310881 |
| 19841 | C | N | 6.217616580310881 |
| 19842 | T | N | 6.217616580310881 |
| 19843 | A | N | 6.217616580310881 |
| 19844 | T | N | 6.217616580310881 |
| 19845 | T | N | 6.217616580310881 |
| 19846 | A | N | 6.217616580310881 |
| 19847 | C | N | 6.217616580310881 |
| 19848 | T | N | 6.217616580310881 |
| 19849 | C | N | 6.217616580310881 |
| 19850 | T | N | 6.217616580310881 |
| 19851 | G | N | 6.217616580310881 |
| 19852 | A | N | 6.217616580310881 |
| 19853 | C | N | 6.217616580310881 |
| 19854 | A | N | 6.217616580310881 |
| 19855 | G | N | 6.217616580310881 |
| 19856 | T | N | 6.217616580310881 |
| 19857 | C | N | 6.217616580310881 |
| 19858 | C | N | 6.217616580310881 |
| 19859 | A | N | 6.217616580310881 |
| 19860 | T | N | 6.217616580310881 |
| 19861 | G | N | 6.217616580310881 |
| 19862 | T | N | 6.217616580310881 |
| 19863 | G | N | 6.217616580310881 |
| 19864 | A | N | 6.217616580310881 |
| 19865 | G | N | 6.217616580310881 |
| 19866 | T | N | 6.217616580310881 |
| 19867 | C | N | 6.217616580310881 |
| 19868 | T | N | 6.217616580310881 |
| 19869 | C | N | 6.217616580310881 |
| 19870 | A | N | 6.217616580310881 |
| 19871 | T | N | 6.217616580310881 |
| 19872 | G | N | 6.217616580310881 |
| 19873 | G | N | 6.217616580310881 |
| 19874 | A | N | 6.217616580310881 |
| 19875 | A | N | 6.217616580310881 |
| 19876 | A | N | 6.217616580310881 |
| 19877 | A | N | 6.217616580310881 |
| 19878 | C | N | 6.217616580310881 |
| 19879 | A | N | 6.217616580310881 |
| 19880 | A | N | 6.217616580310881 |
| 19881 | G | N | 6.217616580310881 |
| 19882 | T | N | 6.217616580310881 |
| 19883 | A | N | 6.217616580310881 |
| 19884 | G | N | 6.217616580310881 |
| 19885 | T | N | 6.217616580310881 |
| 19886 | G | N | 6.217616580310881 |
| 19887 | T | N | 6.217616580310881 |
| 19888 | C | N | 6.217616580310881 |
| 19889 | A | N | 6.217616580310881 |
| 19890 | G | N | 6.217616580310881 |
| 19891 | A | N | 6.217616580310881 |
| 19892 | T | N | 6.217616580310881 |
| 19893 | A | N | 6.217616580310881 |
| 19894 | T | N | 6.217616580310881 |
| 19895 | A | N | 6.217616580310881 |
| 19896 | G | N | 6.217616580310881 |
| 19897 | A | N | 6.217616580310881 |
| 19898 | T | N | 6.217616580310881 |
| 19899 | T | N | 6.7357512953367875 |
| 19900 | A | N | 6.7357512953367875 |
| 19901 | T | N | 6.7357512953367875 |
| 19902 | G | N | 6.217616580310881 |
| 19903 | T | N | 6.217616580310881 |
| 19904 | A | N | 6.217616580310881 |
| 19905 | C | N | 6.217616580310881 |
| 19906 | C | N | 6.217616580310881 |
| 19907 | A | N | 6.217616580310881 |
| 19908 | C | N | 6.217616580310881 |
| 19909 | T | N | 6.217616580310881 |
| 19910 | A | N | 6.217616580310881 |
| 19911 | A | N | 6.217616580310881 |
| 19912 | A | N | 6.217616580310881 |
| 19913 | G | N | 6.217616580310881 |
| 19914 | T | N | 6.217616580310881 |
| 19915 | C | N | 6.217616580310881 |
| 19916 | T | N | 6.217616580310881 |
| 19917 | G | N | 6.217616580310881 |
| 19918 | C | N | 6.217616580310881 |
| 19919 | T | N | 6.7357512953367875 |
| 19920 | A | N | 6.7357512953367875 |
| 19921 | C | N | 6.7357512953367875 |
| 19922 | G | N | 6.7357512953367875 |
| 19923 | T | N | 6.7357512953367875 |
| 19924 | G | N | 6.7357512953367875 |
| 19925 | T | N | 6.7357512953367875 |
| 19926 | A | N | 6.7357512953367875 |
| 19927 | T | N | 6.7357512953367875 |
| 19928 | A | N | 6.7357512953367875 |
| 19929 | A | N | 6.7357512953367875 |
| 19930 | C | N | 6.7357512953367875 |
| 19931 | A | N | 6.7357512953367875 |
| 19932 | C | N | 6.7357512953367875 |
| 19933 | G | N | 6.7357512953367875 |
| 19934 | T | N | 6.7357512953367875 |
| 19935 | T | N | 6.7357512953367875 |
| 19936 | G | N | 6.7357512953367875 |
| 19937 | C | N | 6.7357512953367875 |
| 19938 | A | N | 6.7357512953367875 |
| 19939 | A | N | 6.7357512953367875 |
| 19940 | T | N | 6.7357512953367875 |
| 19941 | T | N | 6.7357512953367875 |
| 19942 | T | N | 6.7357512953367875 |
| 19943 | A | N | 6.7357512953367875 |
| 19944 | G | N | 6.7357512953367875 |
| 19945 | G | N | 6.7357512953367875 |
| 19946 | T | N | 6.7357512953367875 |
| 19947 | G | N | 6.7357512953367875 |
| 19948 | G | N | 6.7357512953367875 |
| 19949 | T | N | 6.7357512953367875 |
| 19950 | G | N | 6.217616580310881 |
| 19951 | C | N | 6.217616580310881 |
| 19952 | T | N | 6.217616580310881 |
| 19953 | G | N | 6.217616580310881 |
| 19954 | T | N | 6.217616580310881 |
| 19955 | C | N | 6.217616580310881 |
| 19956 | T | N | 5.699481865284974 |
| 19957 | G | N | 5.699481865284974 |
| 19958 | T | N | 5.699481865284974 |
| 19959 | A | N | 5.699481865284974 |
| 19960 | G | N | 5.699481865284974 |
| 19961 | A | N | 5.699481865284974 |
| 19962 | C | N | 6.217616580310881 |
| 19963 | A | N | 7.253886010362693 |
| 19964 | T | N | 7.772020725388601 |
| 19965 | C | N | 7.772020725388601 |
| 19966 | A | N | 7.772020725388601 |
| 19967 | T | N | 7.772020725388601 |
| 19968 | G | N | 7.772020725388601 |
| 19969 | C | N | 7.772020725388601 |
| 19970 | T | N | 7.772020725388601 |
| 19971 | A | N | 7.772020725388601 |
| 19972 | A | N | 7.772020725388601 |
| 19973 | T | N | 7.772020725388601 |
| 19974 | G | N | 7.772020725388601 |
| 19975 | A | N | 8.290155440414509 |
| 19976 | G | N | 8.290155440414509 |
| 19977 | T | N | 8.290155440414509 |
| 19978 | A | N | 8.290155440414509 |
| 19979 | C | N | 8.290155440414509 |
| 19980 | A | N | 8.808290155440414 |
| 19981 | G | N | 8.808290155440414 |
| 19982 | A | N | 8.808290155440414 |
| 19983 | T | N | 8.808290155440414 |
| 19984 | T | N | 8.808290155440414 |
| 19985 | G | N | 8.808290155440414 |
| 19986 | T | N | 8.808290155440414 |
| 19987 | A | N | 8.808290155440414 |
| 19988 | T | N | 8.808290155440414 |
| 19989 | C | N | 8.808290155440414 |
| 19990 | T | N | 8.808290155440414 |
| 19991 | C | N | 9.32642487046632 |
| 19992 | G | N | 9.32642487046632 |
| 19993 | A | N | 9.32642487046632 |
| 19994 | T | N | 9.32642487046632 |
| 19995 | G | N | 9.32642487046632 |
| 19996 | C | N | 9.32642487046632 |
| 19997 | T | N | 9.32642487046632 |
| 19998 | T | N | 9.32642487046632 |
| 19999 | A | N | 9.32642487046632 |
| 20000 | T | N | 9.32642487046632 |
| 20001 | A | N | 9.32642487046632 |
| 20002 | A | N | 9.32642487046632 |
| 20003 | C | N | 9.32642487046632 |
| 20004 | A | N | 10.880829015544041 |
| 20005 | T | N | 10.880829015544041 |
| 20006 | G | N | 10.880829015544041 |
| 20007 | A | N | 10.880829015544041 |
| 20008 | T | N | 10.880829015544041 |
| 20009 | G | N | 10.880829015544041 |
| 20010 | A | N | 10.880829015544041 |
| 20011 | T | N | 10.880829015544041 |
| 20012 | C | N | 10.880829015544041 |
| 20013 | T | N | 10.880829015544041 |
| 20014 | C | N | 10.880829015544041 |
| 20015 | A | N | 10.880829015544041 |
| 20016 | G | N | 10.362694300518134 |
| 20017 | C | N | 10.362694300518134 |
| 20018 | T | N | 10.362694300518134 |
| 20019 | G | N | 7.253886010362693 |
| 20020 | G | N | 7.253886010362693 |
| 20021 | C | N | 6.217616580310881 |
| 20022 | T | N | 6.217616580310881 |
| 20023 | T | N | 6.217616580310881 |
| 20735 | A | G | 5.181347150259067 |
| 21577 | C | T | 21.243523316062177 |
| 22501 | A | N | 5.699481865284974 |
| 22502 | G | N | 5.181347150259067 |
| 22503 | A | N | 5.181347150259067 |
| 22504 | G | N | 5.181347150259067 |
| 22505 | T | N | 5.181347150259067 |
| 22506 | T | N | 5.699481865284974 |
| 22507 | T | N | 5.699481865284974 |
| 22508 | A | N | 5.699481865284974 |
| 22509 | T | N | 5.699481865284974 |
| 22510 | T | N | 5.699481865284974 |
| 22511 | C | N | 6.217616580310881 |
| 22512 | T | N | 6.217616580310881 |
| 22513 | A | N | 5.699481865284974 |
| 22514 | G | N | 5.699481865284974 |
| 22515 | T | N | 5.699481865284974 |
| 22516 | G | N | 5.699481865284974 |
| 22517 | C | N | 5.699481865284974 |
| 22518 | G | N | 5.181347150259067 |
| 22519 | A | N | 5.181347150259067 |
| 22520 | A | N | 5.181347150259067 |
| 22521 | T | N | 5.181347150259067 |
| 22522 | A | N | 5.181347150259067 |
| 22523 | A | N | 5.181347150259067 |
| 22524 | T | N | 5.181347150259067 |
| 22525 | T | N | 5.181347150259067 |
| 22526 | G | N | 5.181347150259067 |
| 22527 | C | N | 5.181347150259067 |
| 22528 | A | N | 5.181347150259067 |
| 23870 | A | G | 87.04663212435233 |
| 24501 | C | T | 10.880829015544041 |
| 26030 | G | T | 57.51295336787565 |
| 26417 | T | N | 5.181347150259067 |
| 26418 | G | N | 5.181347150259067 |
| 26427 | A | N | 5.181347150259067 |
| 26428 | C | N | 5.181347150259067 |
| 26429 | T | N | 5.181347150259067 |
| 26430 | G | N | 5.181347150259067 |
| 26431 | A | N | 5.181347150259067 |
| 26432 | A | N | 5.181347150259067 |
| 26433 | A | N | 5.181347150259067 |
| 26434 | A | N | 5.181347150259067 |
| 26435 | A | N | 5.181347150259067 |
| 26455 | A | N | 5.181347150259067 |
| 26456 | C | N | 5.181347150259067 |
| 26457 | T | N | 5.181347150259067 |
| 27196 | T | C | 11.398963730569948 |
| 27995 | A | N | 8.808290155440414 |
| 27996 | T | N | 9.32642487046632 |
| 27997 | T | N | 9.32642487046632 |
| 27998 | T | N | 8.808290155440414 |
| 27999 | C | N | 8.808290155440414 |
| 28000 | A | N | 8.808290155440414 |
| 28001 | T | N | 8.808290155440414 |
| 28002 | C | N | 8.808290155440414 |
| 28003 | C | N | 8.808290155440414 |
| 28004 | T | N | 8.808290155440414 |
| 28005 | C | N | 8.808290155440414 |
| 28006 | T | N | 8.808290155440414 |
| 28007 | A | N | 8.808290155440414 |
| 28008 | G | N | 8.290155440414509 |
| 28009 | C | N | 7.772020725388601 |
| 28010 | T | N | 7.772020725388601 |
| 28011 | G | N | 7.772020725388601 |
| 28012 | A | N | 7.772020725388601 |
| 28013 | T | N | 7.772020725388601 |
| 28014 | A | N | 7.772020725388601 |
| 28015 | A | N | 7.772020725388601 |
| 28016 | C | N | 7.772020725388601 |
| 28017 | A | N | 7.772020725388601 |
| 28018 | A | N | 7.772020725388601 |
| 28019 | A | N | 7.772020725388601 |
| 28020 | T | N | 7.772020725388601 |
| 28021 | T | N | 7.772020725388601 |
| 28022 | T | N | 7.772020725388601 |
| 28023 | G | N | 7.772020725388601 |
| 28024 | C | N | 7.772020725388601 |
| 28025 | A | N | 7.772020725388601 |
| 28026 | C | N | 7.772020725388601 |
| 28027 | T | N | 7.772020725388601 |
| 28028 | G | N | 7.772020725388601 |
| 28029 | A | N | 7.772020725388601 |
| 28030 | C | N | 7.772020725388601 |
| 28031 | T | N | 7.253886010362693 |
| 28032 | T | N | 7.253886010362693 |
| 28033 | G | N | 7.253886010362693 |
| 28034 | C | N | 7.253886010362693 |
| 28035 | T | N | 7.253886010362693 |
| 28036 | T | N | 7.253886010362693 |
| 28037 | T | N | 7.253886010362693 |
| 28038 | A | N | 7.253886010362693 |
| 28039 | G | N | 7.253886010362693 |
| 28040 | C | N | 7.253886010362693 |
| 28041 | A | N | 7.253886010362693 |
| 28042 | C | N | 7.253886010362693 |
| 28043 | T | N | 7.253886010362693 |
| 28044 | C | N | 7.253886010362693 |
| 28045 | A | N | 7.253886010362693 |
| 28046 | A | N | 7.253886010362693 |
| 28047 | T | N | 7.253886010362693 |
| 28048 | T | N | 7.772020725388601 |
| 28049 | T | N | 7.772020725388601 |
| 28050 | G | N | 7.772020725388601 |
| 28051 | C | N | 7.772020725388601 |
| 28052 | T | N | 7.772020725388601 |
| 28053 | T | N | 7.772020725388601 |
| 28054 | T | N | 7.772020725388601 |
| 28055 | T | N | 7.772020725388601 |
| 28056 | G | N | 7.772020725388601 |
| 28057 | C | N | 7.772020725388601 |
| 28058 | T | N | 7.772020725388601 |
| 28059 | T | N | 7.772020725388601 |
| 28060 | G | N | 7.772020725388601 |
| 28061 | T | N | 7.772020725388601 |
| 28062 | C | N | 7.772020725388601 |
| 28063 | C | N | 7.772020725388601 |
| 28064 | T | N | 8.290155440414509 |
| 28065 | G | N | 8.290155440414509 |
| 28066 | A | N | 8.290155440414509 |
| 28067 | C | N | 8.290155440414509 |
| 28068 | G | N | 8.290155440414509 |
| 28069 | G | N | 8.290155440414509 |
| 28070 | C | N | 8.290155440414509 |
| 28071 | G | N | 8.290155440414509 |
| 28072 | T | N | 8.290155440414509 |
| 28073 | A | N | 8.290155440414509 |
| 28074 | A | N | 8.290155440414509 |
| 28075 | A | N | 8.290155440414509 |
| 28076 | A | N | 8.290155440414509 |
| 28077 | C | N | 8.290155440414509 |
| 28078 | A | N | 8.290155440414509 |
| 28079 | C | N | 8.290155440414509 |
| 28080 | G | N | 8.290155440414509 |
| 28081 | T | N | 7.772020725388601 |
| 28082 | C | N | 7.772020725388601 |
| 28083 | T | N | 7.772020725388601 |
| 28084 | A | N | 7.772020725388601 |
| 28085 | T | N | 7.772020725388601 |
| 28086 | C | N | 7.772020725388601 |
| 28087 | A | N | 8.290155440414509 |
| 28088 | G | N | 8.290155440414509 |
| 28089 | T | N | 8.290155440414509 |
| 28090 | T | N | 8.290155440414509 |
| 28091 | A | N | 8.290155440414509 |
| 28092 | C | N | 8.290155440414509 |
| 28093 | G | N | 8.290155440414509 |
| 28094 | T | N | 8.290155440414509 |
| 28095 | G | N | 8.290155440414509 |
| 28096 | C | N | 8.290155440414509 |
| 28097 | C | N | 8.290155440414509 |
| 28098 | A | N | 8.290155440414509 |
| 28099 | G | N | 8.290155440414509 |
| 28100 | A | N | 8.290155440414509 |
| 28101 | T | N | 8.290155440414509 |
| 28102 | C | N | 8.290155440414509 |
| 28103 | A | N | 8.808290155440414 |
| 28104 | G | N | 8.808290155440414 |
| 28105 | T | N | 8.808290155440414 |
| 28106 | T | N | 8.808290155440414 |
| 28107 | T | N | 8.808290155440414 |
| 28108 | C | N | 8.290155440414509 |
| 28109 | A | N | 8.290155440414509 |
| 28110 | C | N | 8.290155440414509 |
| 28111 | C | N | 8.290155440414509 |
| 28112 | T | N | 8.290155440414509 |
| 28113 | A | N | 8.290155440414509 |
| 28114 | A | N | 8.290155440414509 |
| 28115 | A | N | 8.290155440414509 |
| 28116 | C | N | 8.290155440414509 |
| 28117 | T | N | 8.290155440414509 |
| 28118 | G | N | 8.290155440414509 |
| 28119 | T | N | 8.290155440414509 |
| 28120 | T | N | 8.290155440414509 |
| 28121 | C | N | 8.290155440414509 |
| 28122 | A | N | 8.290155440414509 |
| 28123 | T | N | 8.290155440414509 |
| 28124 | C | N | 8.290155440414509 |
| 28125 | A | N | 8.290155440414509 |
| 28126 | G | N | 8.290155440414509 |
| 28127 | A | N | 8.290155440414509 |
| 28128 | C | N | 8.290155440414509 |
| 28129 | A | N | 8.290155440414509 |
| 28130 | A | N | 8.290155440414509 |
| 28131 | G | N | 8.290155440414509 |
| 28132 | A | N | 8.290155440414509 |
| 28133 | G | N | 8.290155440414509 |
| 28134 | G | N | 8.290155440414509 |
| 28135 | A | N | 8.290155440414509 |
| 28136 | A | N | 8.290155440414509 |
| 28137 | G | N | 8.290155440414509 |
| 28138 | T | N | 8.290155440414509 |
| 28139 | T | N | 8.290155440414509 |
| 28140 | C | N | 8.290155440414509 |
| 28141 | A | N | 8.290155440414509 |
| 28142 | A | N | 8.290155440414509 |
| 28143 | G | N | 8.290155440414509 |
| 28144 | A | N | 8.290155440414509 |
| 28145 | A | N | 8.290155440414509 |
| 28146 | C | N | 8.290155440414509 |
| 28147 | T | N | 8.290155440414509 |
| 28148 | T | N | 8.290155440414509 |
| 28149 | T | N | 8.290155440414509 |
| 28150 | A | N | 8.290155440414509 |
| 28151 | C | N | 8.290155440414509 |
| 28152 | T | N | 8.290155440414509 |
| 28153 | C | N | 8.290155440414509 |
| 28154 | T | N | 8.290155440414509 |
| 28155 | C | N | 8.290155440414509 |
| 28156 | C | N | 8.290155440414509 |
| 28157 | A | N | 8.290155440414509 |
| 28158 | A | N | 8.290155440414509 |
| 28159 | T | N | 8.290155440414509 |
| 28160 | T | N | 8.808290155440414 |
| 28161 | T | N | 8.808290155440414 |
| 28162 | T | N | 8.290155440414509 |
| 28163 | T | N | 8.290155440414509 |
| 28164 | C | N | 8.290155440414509 |
| 28165 | T | N | 8.808290155440414 |
| 28166 | T | N | 8.808290155440414 |
| 28167 | A | N | 8.808290155440414 |
| 28168 | T | N | 8.808290155440414 |
| 28169 | T | N | 8.808290155440414 |
| 28170 | G | N | 8.808290155440414 |
| 28171 | T | N | 8.808290155440414 |
| 28172 | T | N | 8.808290155440414 |
| 28173 | G | N | 8.808290155440414 |
| 28174 | C | N | 8.808290155440414 |
| 28175 | G | N | 8.808290155440414 |
| 28176 | G | N | 8.808290155440414 |
| 28177 | C | N | 8.808290155440414 |
| 28178 | A | N | 8.808290155440414 |
| 28179 | A | N | 8.808290155440414 |
| 28180 | T | N | 8.808290155440414 |
| 28181 | A | N | 8.808290155440414 |
| 28182 | G | N | 8.808290155440414 |
| 28183 | T | N | 8.808290155440414 |
| 28184 | G | N | 8.808290155440414 |
| 28185 | T | N | 8.808290155440414 |
| 28186 | T | N | 8.808290155440414 |
| 28187 | T | N | 8.808290155440414 |
| 28188 | A | N | 8.808290155440414 |
| 28189 | T | N | 8.808290155440414 |
| 28190 | A | N | 8.808290155440414 |
| 28191 | A | N | 8.808290155440414 |
| 28192 | C | N | 8.808290155440414 |
| 28193 | A | N | 8.808290155440414 |
| 28194 | C | N | 8.808290155440414 |
| 28195 | T | N | 8.808290155440414 |
| 28196 | T | N | 8.808290155440414 |
| 28197 | T | N | 8.808290155440414 |
| 28198 | G | N | 8.808290155440414 |
| 28199 | C | N | 8.808290155440414 |
| 28200 | T | N | 8.808290155440414 |
| 28201 | T | N | 8.808290155440414 |
| 28202 | C | N | 8.808290155440414 |
| 28203 | A | N | 9.32642487046632 |
| 28204 | C | N | 9.32642487046632 |
| 28205 | A | N | 9.32642487046632 |
| 28206 | C | N | 9.32642487046632 |
| 28207 | T | N | 9.32642487046632 |
| 28208 | C | N | 9.32642487046632 |
| 28209 | A | N | 9.32642487046632 |
| 28210 | A | N | 9.32642487046632 |
| 28211 | A | N | 9.32642487046632 |
| 28212 | A | N | 9.32642487046632 |
| 28213 | G | N | 9.32642487046632 |
| 28214 | A | N | 9.32642487046632 |
| 28215 | A | N | 9.32642487046632 |
| 28216 | A | N | 9.32642487046632 |
| 28217 | G | N | 9.32642487046632 |
| 28218 | A | N | 9.32642487046632 |
| 28219 | C | N | 9.32642487046632 |
| 28220 | A | N | 9.844559585492227 |
| 28221 | G | N | 9.844559585492227 |
| 28222 | A | N | 9.844559585492227 |
| 28223 | A | N | 9.844559585492227 |
| 28224 | T | N | 9.844559585492227 |
| 28225 | G | N | 9.844559585492227 |
| 28226 | A | N | 9.844559585492227 |
| 28227 | T | N | 9.844559585492227 |
| 28228 | T | N | 9.844559585492227 |
| 28229 | G | N | 9.844559585492227 |
| 28230 | A | N | 10.362694300518134 |
| 28231 | A | N | 10.362694300518134 |
| 28232 | C | N | 10.362694300518134 |
| 28233 | T | N | 10.362694300518134 |
| 28234 | T | N | 10.362694300518134 |
| 28235 | T | N | 10.362694300518134 |
| 28236 | C | N | 10.362694300518134 |
| 28237 | A | N | 10.362694300518134 |
| 28238 | T | N | 10.362694300518134 |
| 28239 | T | N | 10.362694300518134 |
| 28240 | A | N | 10.362694300518134 |
| 28241 | A | N | 10.362694300518134 |
| 28242 | T | N | 10.362694300518134 |
| 28243 | T | N | 10.362694300518134 |
| 28244 | G | N | 10.362694300518134 |
| 28245 | A | N | 10.880829015544041 |
| 28246 | C | N | 10.880829015544041 |
| 28247 | T | N | 10.880829015544041 |
| 28248 | T | N | 10.880829015544041 |
| 28249 | C | N | 10.880829015544041 |
| 28250 | T | N | 11.398963730569948 |
| 28251 | A | N | 11.398963730569948 |
| 28252 | T | N | 10.880829015544041 |
| 28253 | T | N | 10.880829015544041 |
| 28254 | T | N | 10.880829015544041 |
| 28255 | G | N | 10.880829015544041 |
| 28256 | T | N | 10.880829015544041 |
| 28257 | G | N | 10.880829015544041 |
| 28258 | C | N | 6.217616580310881 |
| 28431 | C | T | 19.689119170984455 |
| 28544 | G | C | 10.880829015544041 |
| 28611 | T | C | 10.880829015544041 |
| 29322 | C | T | 17.098445595854923 |
| 29330 | C | T | 6.7357512953367875 |
| 29357 | G | A | 21.761658031088082 |
| 29358 | G | A | 21.761658031088082 |
| 29359 | G | C | 21.761658031088082 |
| 30016 | G | A | 17.098445595854923 |
| 30176 | A | G | 9.32642487046632 |
| 30313 | C | - | 8.290155440414509 |
| 30314 | C | - | 8.290155440414509 |
| 30315 | A | - | 8.290155440414509 |
| 30316 | T | - | 8.290155440414509 |
| 30317 | G | - | 8.290155440414509 |
| 30318 | T | - | 8.290155440414509 |
| 30319 | G | - | 8.290155440414509 |
| 30320 | A | - | 9.32642487046632 |
| 30321 | T | - | 9.32642487046632 |
| 30322 | T | - | 9.32642487046632 |
| 30323 | T | - | 9.32642487046632 |
| 30324 | T | - | 9.32642487046632 |
| 30325 | A | - | 9.32642487046632 |
| 30326 | A | - | 9.32642487046632 |
| 30327 | T | - | 9.844559585492227 |
| 30328 | A | - | 10.362694300518134 |
| 30329 | G | - | 10.362694300518134 |
| 30330 | C | - | 15.544041450777202 |
| 30331 | T | - | 22.797927461139896 |
| 30331 | T | N | 5.699481865284974 |
| 30332 | T | - | 30.05181347150259 |
| 30332 | T | N | 5.699481865284974 |
| 30333 | C | - | 46.63212435233161 |
| 30333 | C | N | 5.699481865284974 |
| 30334 | T | - | 70.46632124352331 |
| 30334 | T | N | 6.217616580310881 |
| 30335 | T | - | 77.2020725388601 |
| 30335 | T | N | 9.844559585492227 |
| 30336 | A | - | 82.38341968911918 |
| 30336 | A | N | 9.844559585492227 |
| 30337 | G | - | 82.90155440414507 |
| 30337 | G | N | 9.844559585492227 |
| 30338 | G | - | 82.90155440414507 |
| 30338 | G | N | 9.844559585492227 |
| 30339 | A | - | 82.90155440414507 |
| 30339 | A | N | 9.844559585492227 |
| 30340 | G | - | 82.90155440414507 |
| 30340 | G | N | 9.844559585492227 |
| 30341 | A | - | 83.41968911917098 |
| 30341 | A | N | 9.844559585492227 |
| 30342 | A | - | 83.93782383419689 |
| 30342 | A | N | 9.844559585492227 |
| 30343 | T | - | 84.97409326424871 |
| 30343 | T | N | 6.217616580310881 |
| 30344 | G | - | 84.97409326424871 |
| 30344 | G | N | 6.217616580310881 |
| 30345 | A | - | 84.97409326424871 |
| 30346 | C | - | 84.97409326424871 |
| 30347 | A | - | 84.97409326424871 |
| 30348 | A | - | 84.97409326424871 |
| 30349 | A | - | 84.97409326424871 |
| 30350 | A | - | 84.97409326424871 |
| 30351 | A | - | 84.97409326424871 |
| 30352 | A | - | 84.97409326424871 |
| 30353 | A | - | 84.97409326424871 |
| 30354 | A | - | 84.97409326424871 |
| 30355 | A | - | 84.97409326424871 |
| 30356 | A | - | 85.49222797927462 |
| 30357 | A | - | 88.60103626943005 |
| 30358 | A | - | 89.63730569948186 |
| 30359 | A | - | 94.81865284974094 |
| 30360 | A | - | 98.44559585492227 |
| 30361 | A | - | 98.44559585492227 |
| 30362 | A | - | 98.44559585492227 |
| 30363 | A | - | 98.44559585492227 |
| 30364 | A | - | 98.44559585492227 |
| 30365 | A | - | 98.44559585492227 |
| 30366 | A | - | 98.44559585492227 |
| 30367 | A | - | 98.44559585492227 |
| 30368 | A | - | 98.44559585492227 |
| 30369 | A | - | 98.44559585492227 |
| 30370 | A | - | 98.44559585492227 |
| 30371 | A | - | 98.44559585492227 |
| 30372 | A | - | 98.44559585492227 |
| 30373 | A | - | 98.44559585492227 |
| 30374 | A | - | 98.44559585492227 |
| 30375 | A | - | 98.44559585492227 |
| 30376 | A | - | 98.44559585492227 |
| 30377 | A | - | 98.44559585492227 |
| 30378 | A | - | 98.44559585492227 |
| 30379 | A | - | 98.44559585492227 |