## genetic distances table

| **Var1** | **Var2** | **value** |
| --- | --- | --- |
| Ale | Ale | 0.0000000000 |
| Ber | Ale | 0.0918257652 |
| Brd | Ale | 0.0997256167 |
| Cor | Ale | 0.0908496979 |
| Cro | Ale | 0.0998994830 |
| Eye | Ale | 0.0927408974 |
| Flo | Ale | 0.0965173919 |
| Gul | Ale | 0.0834582413 |
| Heb | Ale | 0.1037526510 |
| Hel | Ale | 0.0938775784 |
| Hoo | Ale | 0.0935740938 |
| Idr16 | Ale | 0.1037058269 |
| Idr17 | Ale | 0.1054381280 |
| Iom | Ale | 0.0848889767 |
| Ios | Ale | 0.0801357445 |
| Jer | Ale | 0.0989868270 |
| Kav | Ale | 0.0798020940 |
| Kil | Ale | 0.1029681942 |
| Laz | Ale | 0.1012567390 |
| Loo | Ale | 0.0898683293 |
| Lyn | Ale | 0.0925192652 |
| Lys | Ale | 0.0886687659 |
| Mul | Ale | 0.0945938938 |
| Oos | Ale | 0.1122675899 |
| Ork | Ale | 0.1054290403 |
| Pad | Ale | 0.1030540121 |
| Pem | Ale | 0.1021363979 |
| Sar13 | Ale | 0.1163092828 |
| Sar17 | Ale | 0.0723525493 |
| Sbs | Ale | 0.0973882600 |
| She | Ale | 0.0975391464 |
| Sin | Ale | 0.0869085737 |
| Sky | Ale | 0.0116398149 |
| Sul | Ale | 0.1064713020 |
| Tar | Ale | 0.1013354485 |
| The | Ale | 0.0107562313 |
| Tor | Ale | 0.0170791442 |
| Tro | Ale | 0.0943370854 |
| Ven | Ale | 0.1096439663 |
| Vig | Ale | 0.0989357115 |
| Ale | Ber | 0.0918257652 |
| Ber | Ber | 0.0000000000 |
| Brd | Ber | 0.0135793802 |
| Cor | Ber | 0.0400683597 |
| Cro | Ber | 0.0150448887 |
| Eye | Ber | 0.0239319334 |
| Flo | Ber | 0.0165276671 |
| Gul | Ber | 0.0070584250 |
| Heb | Ber | 0.0355416889 |
| Hel | Ber | 0.0114162947 |
| Hoo | Ber | 0.0274145325 |
| Idr16 | Ber | 0.0492987681 |
| Idr17 | Ber | 0.0688485090 |
| Iom | Ber | 0.0347392574 |
| Ios | Ber | 0.0356372676 |
| Jer | Ber | 0.0291453212 |
| Kav | Ber | 0.0166064359 |
| Kil | Ber | 0.0424068837 |
| Laz | Ber | 0.2023956199 |
| Loo | Ber | 0.0357957478 |
| Lyn | Ber | 0.0305249575 |
| Lys | Ber | 0.0121705106 |
| Mul | Ber | 0.0384108693 |
| Oos | Ber | 0.0316703850 |
| Ork | Ber | 0.0277996760 |
| Pad | Ber | 0.0344957891 |
| Pem | Ber | 0.0362822623 |
| Sar13 | Ber | 0.2649497377 |
| Sar17 | Ber | 0.1871078765 |
| Sbs | Ber | 0.0264688283 |
| She | Ber | 0.0321924038 |
| Sin | Ber | 0.0137039144 |
| Sky | Ber | 0.1055108745 |
| Sul | Ber | 0.0288717718 |
| Tar | Ber | 0.2034225691 |
| The | Ber | 0.0946710215 |
| Tor | Ber | 0.0948886514 |
| Tro | Ber | 0.0086869776 |
| Ven | Ber | 0.0348728851 |
| Vig | Ber | 0.0895282099 |
| Ale | Brd | 0.0997256167 |
| Ber | Brd | 0.0135793802 |
| Brd | Brd | 0.0000000000 |
| Cor | Brd | 0.0234191717 |
| Cro | Brd | 0.0093199288 |
| Eye | Brd | 0.0235624679 |
| Flo | Brd | 0.0208229543 |
| Gul | Brd | 0.0125672954 |
| Heb | Brd | 0.0216978297 |
| Hel | Brd | 0.0125334352 |
| Hoo | Brd | 0.0165555053 |
| Idr16 | Brd | 0.0299039015 |
| Idr17 | Brd | 0.0453083748 |
| Iom | Brd | 0.0247846244 |
| Ios | Brd | 0.0239371418 |
| Jer | Brd | 0.0164841562 |
| Kav | Brd | 0.0204667443 |
| Kil | Brd | 0.0223122290 |
| Laz | Brd | 0.1858780699 |
| Loo | Brd | 0.0223138806 |
| Lyn | Brd | 0.0147612453 |
| Lys | Brd | 0.0180182736 |
| Mul | Brd | 0.0231994137 |
| Oos | Brd | 0.0408708273 |
| Ork | Brd | 0.0171856576 |
| Pad | Brd | 0.0186257676 |
| Pem | Brd | 0.0219760209 |
| Sar13 | Brd | 0.2482599627 |
| Sar17 | Brd | 0.1755335811 |
| Sbs | Brd | 0.0168931793 |
| She | Brd | 0.0173292834 |
| Sin | Brd | 0.0202715219 |
| Sky | Brd | 0.1130460982 |
| Sul | Brd | 0.0173033314 |
| Tar | Brd | 0.1861373837 |
| The | Brd | 0.1050215912 |
| Tor | Brd | 0.1072971086 |
| Tro | Brd | 0.0145653613 |
| Ven | Brd | 0.0209516549 |
| Vig | Brd | 0.0617857601 |
| Ale | Cor | 0.0908496979 |
| Ber | Cor | 0.0400683597 |
| Brd | Cor | 0.0234191717 |
| Cor | Cor | 0.0000000000 |
| Cro | Cor | 0.0262942687 |
| Eye | Cor | 0.0275070709 |
| Flo | Cor | 0.0403482105 |
| Gul | Cor | 0.0365363781 |
| Heb | Cor | 0.0105319247 |
| Hel | Cor | 0.0418199448 |
| Hoo | Cor | 0.0092177189 |
| Idr16 | Cor | 0.0117830484 |
| Idr17 | Cor | 0.0168595206 |
| Iom | Cor | 0.0114870484 |
| Ios | Cor | 0.0105211235 |
| Jer | Cor | 0.0121920555 |
| Kav | Cor | 0.0342891228 |
| Kil | Cor | 0.0084491992 |
| Laz | Cor | 0.1469933416 |
| Loo | Cor | 0.0090287503 |
| Lyn | Cor | 0.0127258253 |
| Lys | Cor | 0.0365251902 |
| Mul | Cor | 0.0084828851 |
| Oos | Cor | 0.0506235649 |
| Ork | Cor | 0.0115678636 |
| Pad | Cor | 0.0091242364 |
| Pem | Cor | 0.0114165238 |
| Sar13 | Cor | 0.1927529561 |
| Sar17 | Cor | 0.1361852702 |
| Sbs | Cor | 0.0111925671 |
| She | Cor | 0.0090686933 |
| Sin | Cor | 0.0383955879 |
| Sky | Cor | 0.1037473146 |
| Sul | Cor | 0.0120609558 |
| Tar | Cor | 0.1479676146 |
| The | Cor | 0.1010356924 |
| Tor | Cor | 0.1111834653 |
| Tro | Cor | 0.0365719576 |
| Ven | Cor | 0.0094617681 |
| Vig | Cor | 0.0240719784 |
| Ale | Cro | 0.0998994830 |
| Ber | Cro | 0.0150448887 |
| Brd | Cro | 0.0093199288 |
| Cor | Cro | 0.0262942687 |
| Cro | Cro | 0.0000000000 |
| Eye | Cro | 0.0221474719 |
| Flo | Cro | 0.0221656276 |
| Gul | Cro | 0.0117959741 |
| Heb | Cro | 0.0199978211 |
| Hel | Cro | 0.0134052413 |
| Hoo | Cro | 0.0159750752 |
| Idr16 | Cro | 0.0294215667 |
| Idr17 | Cro | 0.0453735403 |
| Iom | Cro | 0.0225714234 |
| Ios | Cro | 0.0232865156 |
| Jer | Cro | 0.0167312311 |
| Kav | Cro | 0.0187942483 |
| Kil | Cro | 0.0245213779 |
| Laz | Cro | 0.1885637366 |
| Loo | Cro | 0.0247635777 |
| Lyn | Cro | 0.0162059424 |
| Lys | Cro | 0.0187041228 |
| Mul | Cro | 0.0215104641 |
| Oos | Cro | 0.0353309691 |
| Ork | Cro | 0.0168528781 |
| Pad | Cro | 0.0200600911 |
| Pem | Cro | 0.0228036431 |
| Sar13 | Cro | 0.2518008028 |
| Sar17 | Cro | 0.1824048857 |
| Sbs | Cro | 0.0154462897 |
| She | Cro | 0.0193553654 |
| Sin | Cro | 0.0185994573 |
| Sky | Cro | 0.1146682847 |
| Sul | Cro | 0.0169236685 |
| Tar | Cro | 0.1879062916 |
| The | Cro | 0.1060894729 |
| Tor | Cro | 0.1065992175 |
| Tro | Cro | 0.0138090747 |
| Ven | Cro | 0.0184137850 |
| Vig | Cro | 0.0673779813 |
| Ale | Eye | 0.0927408974 |
| Ber | Eye | 0.0239319334 |
| Brd | Eye | 0.0235624679 |
| Cor | Eye | 0.0275070709 |
| Cro | Eye | 0.0221474719 |
| Eye | Eye | 0.0000000000 |
| Flo | Eye | 0.0280340945 |
| Gul | Eye | 0.0232041204 |
| Heb | Eye | 0.0274599526 |
| Hel | Eye | 0.0245426859 |
| Hoo | Eye | 0.0235193345 |
| Idr16 | Eye | 0.0402125546 |
| Idr17 | Eye | 0.0425139617 |
| Iom | Eye | 0.0273680944 |
| Ios | Eye | 0.0270993754 |
| Jer | Eye | 0.0246371690 |
| Kav | Eye | 0.0259467005 |
| Kil | Eye | 0.0295054557 |
| Laz | Eye | 0.1722560579 |
| Loo | Eye | 0.0272810035 |
| Lyn | Eye | 0.0311106476 |
| Lys | Eye | 0.0209144081 |
| Mul | Eye | 0.0265545911 |
| Oos | Eye | 0.0351114798 |
| Ork | Eye | 0.0261856138 |
| Pad | Eye | 0.0271466779 |
| Pem | Eye | 0.0312992791 |
| Sar13 | Eye | 0.2284520706 |
| Sar17 | Eye | 0.1605820914 |
| Sbs | Eye | 0.0242850505 |
| She | Eye | 0.0268646743 |
| Sin | Eye | 0.0232520703 |
| Sky | Eye | 0.1016017797 |
| Sul | Eye | 0.0208128773 |
| Tar | Eye | 0.1732290391 |
| The | Eye | 0.0952110924 |
| Tor | Eye | 0.0968898117 |
| Tro | Eye | 0.0233721677 |
| Ven | Eye | 0.0273790674 |
| Vig | Eye | 0.0643694489 |
| Ale | Flo | 0.0965173919 |
| Ber | Flo | 0.0165276671 |
| Brd | Flo | 0.0208229543 |
| Cor | Flo | 0.0403482105 |
| Cro | Flo | 0.0221656276 |
| Eye | Flo | 0.0280340945 |
| Flo | Flo | 0.0000000000 |
| Gul | Flo | 0.0124677851 |
| Heb | Flo | 0.0351643875 |
| Hel | Flo | 0.0133168376 |
| Hoo | Flo | 0.0249672593 |
| Idr16 | Flo | 0.0443594292 |
| Idr17 | Flo | 0.0723190528 |
| Iom | Flo | 0.0355062742 |
| Ios | Flo | 0.0361860292 |
| Jer | Flo | 0.0247621956 |
| Kav | Flo | 0.0078117466 |
| Kil | Flo | 0.0389105564 |
| Laz | Flo | 0.1975638362 |
| Loo | Flo | 0.0371433966 |
| Lyn | Flo | 0.0416875011 |
| Lys | Flo | 0.0078503044 |
| Mul | Flo | 0.0399657657 |
| Oos | Flo | 0.0357459315 |
| Ork | Flo | 0.0266852571 |
| Pad | Flo | 0.0315517357 |
| Pem | Flo | 0.0305780351 |
| Sar13 | Flo | 0.2554234294 |
| Sar17 | Flo | 0.1823407969 |
| Sbs | Flo | 0.0253970970 |
| She | Flo | 0.0315505060 |
| Sin | Flo | 0.0085235069 |
| Sky | Flo | 0.1170752158 |
| Sul | Flo | 0.0296341511 |
| Tar | Flo | 0.1980859293 |
| The | Flo | 0.1048153346 |
| Tor | Flo | 0.1074757253 |
| Tro | Flo | 0.0190541907 |
| Ven | Flo | 0.0345605159 |
| Vig | Flo | 0.0920903221 |
| Ale | Gul | 0.0834582413 |
| Ber | Gul | 0.0070584250 |
| Brd | Gul | 0.0125672954 |
| Cor | Gul | 0.0365363781 |
| Cro | Gul | 0.0117959741 |
| Eye | Gul | 0.0232041204 |
| Flo | Gul | 0.0124677851 |
| Gul | Gul | 0.0000000000 |
| Heb | Gul | 0.0336957763 |
| Hel | Gul | 0.0072074814 |
| Hoo | Gul | 0.0251613239 |
| Idr16 | Gul | 0.0454098479 |
| Idr17 | Gul | 0.0612171414 |
| Iom | Gul | 0.0315602406 |
| Ios | Gul | 0.0329178781 |
| Jer | Gul | 0.0262826661 |
| Kav | Gul | 0.0146057683 |
| Kil | Gul | 0.0377560885 |
| Laz | Gul | 0.1929097499 |
| Loo | Gul | 0.0343705354 |
| Lyn | Gul | 0.0273306582 |
| Lys | Gul | 0.0111610964 |
| Mul | Gul | 0.0356471529 |
| Oos | Gul | 0.0360645814 |
| Ork | Gul | 0.0262254100 |
| Pad | Gul | 0.0297295441 |
| Pem | Gul | 0.0335938479 |
| Sar13 | Gul | 0.2498561607 |
| Sar17 | Gul | 0.1738821901 |
| Sbs | Gul | 0.0262653110 |
| She | Gul | 0.0298163155 |
| Sin | Gul | 0.0129074865 |
| Sky | Gul | 0.0986278319 |
| Sul | Gul | 0.0268660165 |
| Tar | Gul | 0.1935203000 |
| The | Gul | 0.0892436919 |
| Tor | Gul | 0.0901497429 |
| Tro | Gul | 0.0099578392 |
| Ven | Gul | 0.0333601394 |
| Vig | Gul | 0.0840863944 |
| Ale | Heb | 0.1037526510 |
| Ber | Heb | 0.0355416889 |
| Brd | Heb | 0.0216978297 |
| Cor | Heb | 0.0105319247 |
| Cro | Heb | 0.0199978211 |
| Eye | Heb | 0.0274599526 |
| Flo | Heb | 0.0351643875 |
| Gul | Heb | 0.0336957763 |
| Heb | Heb | 0.0000000000 |
| Hel | Heb | 0.0355479638 |
| Hoo | Heb | 0.0066031670 |
| Idr16 | Heb | 0.0119928150 |
| Idr17 | Heb | 0.0245256030 |
| Iom | Heb | 0.0087739202 |
| Ios | Heb | 0.0095951679 |
| Jer | Heb | 0.0106514192 |
| Kav | Heb | 0.0321341508 |
| Kil | Heb | 0.0117297570 |
| Laz | Heb | 0.1723206383 |
| Loo | Heb | 0.0140312435 |
| Lyn | Heb | 0.0154441381 |
| Lys | Heb | 0.0324918216 |
| Mul | Heb | 0.0122260785 |
| Oos | Heb | 0.0438676146 |
| Ork | Heb | 0.0130661787 |
| Pad | Heb | 0.0105206602 |
| Pem | Heb | 0.0111143142 |
| Sar13 | Heb | 0.2288957946 |
| Sar17 | Heb | 0.1590566989 |
| Sbs | Heb | 0.0104118231 |
| She | Heb | 0.0093813001 |
| Sin | Heb | 0.0304029113 |
| Sky | Heb | 0.1201053115 |
| Sul | Heb | 0.0093004828 |
| Tar | Heb | 0.1719046792 |
| The | Heb | 0.1115759398 |
| Tor | Heb | 0.1212784982 |
| Tro | Heb | 0.0338294505 |
| Ven | Heb | 0.0064302609 |
| Vig | Heb | 0.0359450901 |
| Ale | Hel | 0.0938775784 |
| Ber | Hel | 0.0114162947 |
| Brd | Hel | 0.0125334352 |
| Cor | Hel | 0.0418199448 |
| Cro | Hel | 0.0134052413 |
| Eye | Hel | 0.0245426859 |
| Flo | Hel | 0.0133168376 |
| Gul | Hel | 0.0072074814 |
| Heb | Hel | 0.0355479638 |
| Hel | Hel | 0.0000000000 |
| Hoo | Hel | 0.0286077655 |
| Idr16 | Hel | 0.0504211712 |
| Idr17 | Hel | 0.0652354443 |
| Iom | Hel | 0.0369018844 |
| Ios | Hel | 0.0369958361 |
| Jer | Hel | 0.0287303881 |
| Kav | Hel | 0.0152492330 |
| Kil | Hel | 0.0402427347 |
| Laz | Hel | 0.1967964234 |
| Loo | Hel | 0.0375785151 |
| Lyn | Hel | 0.0299607074 |
| Lys | Hel | 0.0115182415 |
| Mul | Hel | 0.0396947980 |
| Oos | Hel | 0.0335806547 |
| Ork | Hel | 0.0296783810 |
| Pad | Hel | 0.0339162479 |
| Pem | Hel | 0.0348202604 |
| Sar13 | Hel | 0.2599616841 |
| Sar17 | Hel | 0.1814571059 |
| Sbs | Hel | 0.0281359567 |
| She | Hel | 0.0320881515 |
| Sin | Hel | 0.0137134424 |
| Sky | Hel | 0.1067069052 |
| Sul | Hel | 0.0284064748 |
| Tar | Hel | 0.1980303680 |
| The | Hel | 0.0977602058 |
| Tor | Hel | 0.0965359416 |
| Tro | Hel | 0.0110160538 |
| Ven | Hel | 0.0346234940 |
| Vig | Hel | 0.0890101156 |
| Ale | Hoo | 0.0935740938 |
| Ber | Hoo | 0.0274145325 |
| Brd | Hoo | 0.0165555053 |
| Cor | Hoo | 0.0092177189 |
| Cro | Hoo | 0.0159750752 |
| Eye | Hoo | 0.0235193345 |
| Flo | Hoo | 0.0249672593 |
| Gul | Hoo | 0.0251613239 |
| Heb | Hoo | 0.0066031670 |
| Hel | Hoo | 0.0286077655 |
| Hoo | Hoo | 0.0000000000 |
| Idr16 | Hoo | 0.0137302001 |
| Idr17 | Hoo | 0.0285236484 |
| Iom | Hoo | 0.0083110003 |
| Ios | Hoo | 0.0105775059 |
| Jer | Hoo | 0.0091828600 |
| Kav | Hoo | 0.0232244156 |
| Kil | Hoo | 0.0127889105 |
| Laz | Hoo | 0.1659370973 |
| Loo | Hoo | 0.0126528261 |
| Lyn | Hoo | 0.0145834316 |
| Lys | Hoo | 0.0242095570 |
| Mul | Hoo | 0.0122506528 |
| Oos | Hoo | 0.0405263585 |
| Ork | Hoo | 0.0108334979 |
| Pad | Hoo | 0.0103834317 |
| Pem | Hoo | 0.0100640226 |
| Sar13 | Hoo | 0.2247078691 |
| Sar17 | Hoo | 0.1558645105 |
| Sbs | Hoo | 0.0074189129 |
| She | Hoo | 0.0104684038 |
| Sin | Hoo | 0.0229224297 |
| Sky | Hoo | 0.1106918329 |
| Sul | Hoo | 0.0090103549 |
| Tar | Hoo | 0.1658558319 |
| The | Hoo | 0.1028225030 |
| Tor | Hoo | 0.1107245754 |
| Tro | Hoo | 0.0257425675 |
| Ven | Hoo | 0.0091398708 |
| Vig | Hoo | 0.0404046298 |
| Ale | Idr16 | 0.1037058269 |
| Ber | Idr16 | 0.0492987681 |
| Brd | Idr16 | 0.0299039015 |
| Cor | Idr16 | 0.0117830484 |
| Cro | Idr16 | 0.0294215667 |
| Eye | Idr16 | 0.0402125546 |
| Flo | Idr16 | 0.0443594292 |
| Gul | Idr16 | 0.0454098479 |
| Heb | Idr16 | 0.0119928150 |
| Hel | Idr16 | 0.0504211712 |
| Hoo | Idr16 | 0.0137302001 |
| Idr16 | Idr16 | 0.0000000000 |
| Idr17 | Idr16 | 0.0263294847 |
| Iom | Idr16 | 0.0164455713 |
| Ios | Idr16 | 0.0114785932 |
| Jer | Idr16 | 0.0159659810 |
| Kav | Idr16 | 0.0380452357 |
| Kil | Idr16 | 0.0117899261 |
| Laz | Idr16 | 0.1415934498 |
| Loo | Idr16 | 0.0127528219 |
| Lyn | Idr16 | 0.0195483535 |
| Lys | Idr16 | 0.0441556815 |
| Mul | Idr16 | 0.0159521258 |
| Oos | Idr16 | 0.0651579606 |
| Ork | Idr16 | 0.0169232337 |
| Pad | Idr16 | 0.0127363910 |
| Pem | Idr16 | 0.0129042793 |
| Sar13 | Idr16 | 0.1886977036 |
| Sar17 | Idr16 | 0.1383811561 |
| Sbs | Idr16 | 0.0147584041 |
| She | Idr16 | 0.0126309030 |
| Sin | Idr16 | 0.0441637166 |
| Sky | Idr16 | 0.1223751872 |
| Sul | Idr16 | 0.0168474427 |
| Tar | Idr16 | 0.1407085365 |
| The | Idr16 | 0.1141673718 |
| Tor | Idr16 | 0.1274376154 |
| Tro | Idr16 | 0.0441626613 |
| Ven | Idr16 | 0.0131076620 |
| Vig | Idr16 | 0.0261650766 |
| Ale | Idr17 | 0.1054381280 |
| Ber | Idr17 | 0.0688485090 |
| Brd | Idr17 | 0.0453083748 |
| Cor | Idr17 | 0.0168595206 |
| Cro | Idr17 | 0.0453735403 |
| Eye | Idr17 | 0.0425139617 |
| Flo | Idr17 | 0.0723190528 |
| Gul | Idr17 | 0.0612171414 |
| Heb | Idr17 | 0.0245256030 |
| Hel | Idr17 | 0.0652354443 |
| Hoo | Idr17 | 0.0285236484 |
| Idr16 | Idr17 | 0.0263294847 |
| Idr17 | Idr17 | 0.0000000000 |
| Iom | Idr17 | 0.0265463383 |
| Ios | Idr17 | 0.0238894096 |
| Jer | Idr17 | 0.0308810683 |
| Kav | Idr17 | 0.0699392495 |
| Kil | Idr17 | 0.0211742831 |
| Laz | Idr17 | 0.1357929620 |
| Loo | Idr17 | 0.0201892759 |
| Lyn | Idr17 | 0.0247434477 |
| Lys | Idr17 | 0.0654471489 |
| Mul | Idr17 | 0.0151651666 |
| Oos | Idr17 | 0.0700261543 |
| Ork | Idr17 | 0.0300392827 |
| Pad | Idr17 | 0.0220500232 |
| Pem | Idr17 | 0.0312178820 |
| Sar13 | Idr17 | 0.1789199009 |
| Sar17 | Idr17 | 0.1253794018 |
| Sbs | Idr17 | 0.0338969962 |
| She | Idr17 | 0.0223763871 |
| Sin | Idr17 | 0.0665835830 |
| Sky | Idr17 | 0.1122479654 |
| Sul | Idr17 | 0.0263301144 |
| Tar | Idr17 | 0.1351938911 |
| The | Idr17 | 0.1116984286 |
| Tor | Idr17 | 0.1254954578 |
| Tro | Idr17 | 0.0608528934 |
| Ven | Idr17 | 0.0242676572 |
| Vig | Idr17 | 0.0154178378 |
| Ale | Iom | 0.0848889767 |
| Ber | Iom | 0.0347392574 |
| Brd | Iom | 0.0247846244 |
| Cor | Iom | 0.0114870484 |
| Cro | Iom | 0.0225714234 |
| Eye | Iom | 0.0273680944 |
| Flo | Iom | 0.0355062742 |
| Gul | Iom | 0.0315602406 |
| Heb | Iom | 0.0087739202 |
| Hel | Iom | 0.0369018844 |
| Hoo | Iom | 0.0083110003 |
| Idr16 | Iom | 0.0164455713 |
| Idr17 | Iom | 0.0265463383 |
| Iom | Iom | 0.0000000000 |
| Ios | Iom | 0.0104602046 |
| Jer | Iom | 0.0143376971 |
| Kav | Iom | 0.0310543187 |
| Kil | Iom | 0.0152852001 |
| Laz | Iom | 0.1556268373 |
| Loo | Iom | 0.0140292641 |
| Lyn | Iom | 0.0159071693 |
| Lys | Iom | 0.0332398236 |
| Mul | Iom | 0.0122990246 |
| Oos | Iom | 0.0478292142 |
| Ork | Iom | 0.0159151795 |
| Pad | Iom | 0.0137081686 |
| Pem | Iom | 0.0111105527 |
| Sar13 | Iom | 0.2049556507 |
| Sar17 | Iom | 0.1454751577 |
| Sbs | Iom | 0.0115202626 |
| She | Iom | 0.0102721021 |
| Sin | Iom | 0.0313876163 |
| Sky | Iom | 0.1024131855 |
| Sul | Iom | 0.0119206014 |
| Tar | Iom | 0.1560415301 |
| The | Iom | 0.0963135315 |
| Tor | Iom | 0.1070116260 |
| Tro | Iom | 0.0345351433 |
| Ven | Iom | 0.0113586862 |
| Vig | Iom | 0.0369139690 |
| Ale | Ios | 0.0801357445 |
| Ber | Ios | 0.0356372676 |
| Brd | Ios | 0.0239371418 |
| Cor | Ios | 0.0105211235 |
| Cro | Ios | 0.0232865156 |
| Eye | Ios | 0.0270993754 |
| Flo | Ios | 0.0361860292 |
| Gul | Ios | 0.0329178781 |
| Heb | Ios | 0.0095951679 |
| Hel | Ios | 0.0369958361 |
| Hoo | Ios | 0.0105775059 |
| Idr16 | Ios | 0.0114785932 |
| Idr17 | Ios | 0.0238894096 |
| Iom | Ios | 0.0104602046 |
| Ios | Ios | 0.0000000000 |
| Jer | Ios | 0.0156090807 |
| Kav | Ios | 0.0320930548 |
| Kil | Ios | 0.0123137757 |
| Laz | Ios | 0.1397945804 |
| Loo | Ios | 0.0123791691 |
| Lyn | Ios | 0.0151793824 |
| Lys | Ios | 0.0326065494 |
| Mul | Ios | 0.0132701143 |
| Oos | Ios | 0.0511964061 |
| Ork | Ios | 0.0163337732 |
| Pad | Ios | 0.0092341525 |
| Pem | Ios | 0.0116028132 |
| Sar13 | Ios | 0.1859684173 |
| Sar17 | Ios | 0.1251631143 |
| Sbs | Ios | 0.0120683344 |
| She | Ios | 0.0102556589 |
| Sin | Ios | 0.0316873862 |
| Sky | Ios | 0.0944718617 |
| Sul | Ios | 0.0129822254 |
| Tar | Ios | 0.1402230626 |
| The | Ios | 0.0909936731 |
| Tor | Ios | 0.1006665481 |
| Tro | Ios | 0.0314658851 |
| Ven | Ios | 0.0120223814 |
| Vig | Ios | 0.0309964044 |
| Ale | Jer | 0.0989868270 |
| Ber | Jer | 0.0291453212 |
| Brd | Jer | 0.0164841562 |
| Cor | Jer | 0.0121920555 |
| Cro | Jer | 0.0167312311 |
| Eye | Jer | 0.0246371690 |
| Flo | Jer | 0.0247621956 |
| Gul | Jer | 0.0262826661 |
| Heb | Jer | 0.0106514192 |
| Hel | Jer | 0.0287303881 |
| Hoo | Jer | 0.0091828600 |
| Idr16 | Jer | 0.0159659810 |
| Idr17 | Jer | 0.0308810683 |
| Iom | Jer | 0.0143376971 |
| Ios | Jer | 0.0156090807 |
| Jer | Jer | 0.0000000000 |
| Kav | Jer | 0.0226829016 |
| Kil | Jer | 0.0107896429 |
| Laz | Jer | 0.1673220829 |
| Loo | Jer | 0.0124368412 |
| Lyn | Jer | 0.0174498139 |
| Lys | Jer | 0.0238938273 |
| Mul | Jer | 0.0141775281 |
| Oos | Jer | 0.0441179347 |
| Ork | Jer | 0.0091872169 |
| Pad | Jer | 0.0120006148 |
| Pem | Jer | 0.0094675723 |
| Sar13 | Jer | 0.2302235607 |
| Sar17 | Jer | 0.1619051196 |
| Sbs | Jer | 0.0100465938 |
| She | Jer | 0.0091597234 |
| Sin | Jer | 0.0278916212 |
| Sky | Jer | 0.1201883914 |
| Sul | Jer | 0.0095500857 |
| Tar | Jer | 0.1666592537 |
| The | Jer | 0.1088349498 |
| Tor | Jer | 0.1174547504 |
| Tro | Jer | 0.0255761029 |
| Ven | Jer | 0.0095719451 |
| Vig | Jer | 0.0427478292 |
| Ale | Kav | 0.0798020940 |
| Ber | Kav | 0.0166064359 |
| Brd | Kav | 0.0204667443 |
| Cor | Kav | 0.0342891228 |
| Cro | Kav | 0.0187942483 |
| Eye | Kav | 0.0259467005 |
| Flo | Kav | 0.0078117466 |
| Gul | Kav | 0.0146057683 |
| Heb | Kav | 0.0321341508 |
| Hel | Kav | 0.0152492330 |
| Hoo | Kav | 0.0232244156 |
| Idr16 | Kav | 0.0380452357 |
| Idr17 | Kav | 0.0699392495 |
| Iom | Kav | 0.0310543187 |
| Ios | Kav | 0.0320930548 |
| Jer | Kav | 0.0226829016 |
| Kav | Kav | 0.0000000000 |
| Kil | Kav | 0.0350074757 |
| Laz | Kav | 0.1752456580 |
| Loo | Kav | 0.0332246875 |
| Lyn | Kav | 0.0377228849 |
| Lys | Kav | 0.0090583521 |
| Mul | Kav | 0.0369482566 |
| Oos | Kav | 0.0329016091 |
| Ork | Kav | 0.0238212733 |
| Pad | Kav | 0.0320727359 |
| Pem | Kav | 0.0272354826 |
| Sar13 | Kav | 0.2321546667 |
| Sar17 | Kav | 0.1669743870 |
| Sbs | Kav | 0.0213558627 |
| She | Kav | 0.0286710990 |
| Sin | Kav | 0.0082166945 |
| Sky | Kav | 0.0986271476 |
| Sul | Kav | 0.0286973843 |
| Tar | Kav | 0.1757010436 |
| The | Kav | 0.0867641829 |
| Tor | Kav | 0.0885746319 |
| Tro | Kav | 0.0184817752 |
| Ven | Kav | 0.0306487495 |
| Vig | Kav | 0.0846421334 |
| Ale | Kil | 0.1029681942 |
| Ber | Kil | 0.0424068837 |
| Brd | Kil | 0.0223122290 |
| Cor | Kil | 0.0084491992 |
| Cro | Kil | 0.0245213779 |
| Eye | Kil | 0.0295054557 |
| Flo | Kil | 0.0389105564 |
| Gul | Kil | 0.0377560885 |
| Heb | Kil | 0.0117297570 |
| Hel | Kil | 0.0402427347 |
| Hoo | Kil | 0.0127889105 |
| Idr16 | Kil | 0.0117899261 |
| Idr17 | Kil | 0.0211742831 |
| Iom | Kil | 0.0152852001 |
| Ios | Kil | 0.0123137757 |
| Jer | Kil | 0.0107896429 |
| Kav | Kil | 0.0350074757 |
| Kil | Kil | 0.0000000000 |
| Laz | Kil | 0.1535806528 |
| Loo | Kil | 0.0110024836 |
| Lyn | Kil | 0.0138569949 |
| Lys | Kil | 0.0348484535 |
| Mul | Kil | 0.0084302830 |
| Oos | Kil | 0.0508519364 |
| Ork | Kil | 0.0118164708 |
| Pad | Kil | 0.0098476589 |
| Pem | Kil | 0.0113766577 |
| Sar13 | Kil | 0.2052660683 |
| Sar17 | Kil | 0.1458617129 |
| Sbs | Kil | 0.0134052013 |
| She | Kil | 0.0083256447 |
| Sin | Kil | 0.0369454503 |
| Sky | Kil | 0.1193683927 |
| Sul | Kil | 0.0096259031 |
| Tar | Kil | 0.1527926452 |
| The | Kil | 0.1137385140 |
| Tor | Kil | 0.1230056986 |
| Tro | Kil | 0.0354462612 |
| Ven | Kil | 0.0077462383 |
| Vig | Kil | 0.0264527402 |
| Ale | Laz | 0.1012567390 |
| Ber | Laz | 0.2023956199 |
| Brd | Laz | 0.1858780699 |
| Cor | Laz | 0.1469933416 |
| Cro | Laz | 0.1885637366 |
| Eye | Laz | 0.1722560579 |
| Flo | Laz | 0.1975638362 |
| Gul | Laz | 0.1929097499 |
| Heb | Laz | 0.1723206383 |
| Hel | Laz | 0.1967964234 |
| Hoo | Laz | 0.1659370973 |
| Idr16 | Laz | 0.1415934498 |
| Idr17 | Laz | 0.1357929620 |
| Iom | Laz | 0.1556268373 |
| Ios | Laz | 0.1397945804 |
| Jer | Laz | 0.1673220829 |
| Kav | Laz | 0.1752456580 |
| Kil | Laz | 0.1535806528 |
| Laz | Laz | 0.0000000000 |
| Loo | Laz | 0.1344854032 |
| Lyn | Laz | 0.1643576869 |
| Lys | Laz | 0.1923105604 |
| Mul | Laz | 0.1497356702 |
| Oos | Laz | 0.2122495367 |
| Ork | Laz | 0.1796683303 |
| Pad | Laz | 0.1665573835 |
| Pem | Laz | 0.1672309112 |
| Sar13 | Laz | 0.0622923282 |
| Sar17 | Laz | 0.0420529920 |
| Sbs | Laz | 0.1783286970 |
| She | Laz | 0.1667766819 |
| Sin | Laz | 0.1893006033 |
| Sky | Laz | 0.1096001588 |
| Sul | Laz | 0.1758896706 |
| Tar | Laz | 0.0009557344 |
| The | Laz | 0.1128239304 |
| Tor | Laz | 0.1227513094 |
| Tro | Laz | 0.1875904321 |
| Ven | Laz | 0.1708795034 |
| Vig | Laz | 0.1045974400 |
| Ale | Loo | 0.0898683293 |
| Ber | Loo | 0.0357957478 |
| Brd | Loo | 0.0223138806 |
| Cor | Loo | 0.0090287503 |
| Cro | Loo | 0.0247635777 |
| Eye | Loo | 0.0272810035 |
| Flo | Loo | 0.0371433966 |
| Gul | Loo | 0.0343705354 |
| Heb | Loo | 0.0140312435 |
| Hel | Loo | 0.0375785151 |
| Hoo | Loo | 0.0126528261 |
| Idr16 | Loo | 0.0127528219 |
| Idr17 | Loo | 0.0201892759 |
| Iom | Loo | 0.0140292641 |
| Ios | Loo | 0.0123791691 |
| Jer | Loo | 0.0124368412 |
| Kav | Loo | 0.0332246875 |
| Kil | Loo | 0.0110024836 |
| Laz | Loo | 0.1344854032 |
| Loo | Loo | 0.0000000000 |
| Lyn | Loo | 0.0134873280 |
| Lys | Loo | 0.0327541755 |
| Mul | Loo | 0.0083530006 |
| Oos | Loo | 0.0489893830 |
| Ork | Loo | 0.0138762427 |
| Pad | Loo | 0.0097501547 |
| Pem | Loo | 0.0161726073 |
| Sar13 | Loo | 0.1865585722 |
| Sar17 | Loo | 0.1316356781 |
| Sbs | Loo | 0.0136310838 |
| She | Loo | 0.0099930006 |
| Sin | Loo | 0.0333366554 |
| Sky | Loo | 0.1038996980 |
| Sul | Loo | 0.0109764397 |
| Tar | Loo | 0.1343311538 |
| The | Loo | 0.1006063379 |
| Tor | Loo | 0.1090865825 |
| Tro | Loo | 0.0292856585 |
| Ven | Loo | 0.0101862576 |
| Vig | Loo | 0.0250364964 |
| Ale | Lyn | 0.0925192652 |
| Ber | Lyn | 0.0305249575 |
| Brd | Lyn | 0.0147612453 |
| Cor | Lyn | 0.0127258253 |
| Cro | Lyn | 0.0162059424 |
| Eye | Lyn | 0.0311106476 |
| Flo | Lyn | 0.0416875011 |
| Gul | Lyn | 0.0273306582 |
| Heb | Lyn | 0.0154441381 |
| Hel | Lyn | 0.0299607074 |
| Hoo | Lyn | 0.0145834316 |
| Idr16 | Lyn | 0.0195483535 |
| Idr17 | Lyn | 0.0247434477 |
| Iom | Lyn | 0.0159071693 |
| Ios | Lyn | 0.0151793824 |
| Jer | Lyn | 0.0174498139 |
| Kav | Lyn | 0.0377228849 |
| Kil | Lyn | 0.0138569949 |
| Laz | Lyn | 0.1643576869 |
| Loo | Lyn | 0.0134873280 |
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| Mul | Lyn | 0.0117886806 |
| Oos | Lyn | 0.0501914474 |
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| Pad | Lyn | 0.0128468932 |
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| Sar13 | Lyn | 0.2094887943 |
| Sar17 | Lyn | 0.1464450029 |
| Sbs | Lyn | 0.0154693247 |
| She | Lyn | 0.0116241850 |
| Sin | Lyn | 0.0352216181 |
| Sky | Lyn | 0.1051321129 |
| Sul | Lyn | 0.0151357213 |
| Tar | Lyn | 0.1644810454 |
| The | Lyn | 0.1013878753 |
| Tor | Lyn | 0.1107920179 |
| Tro | Lyn | 0.0279760369 |
| Ven | Lyn | 0.0128666044 |
| Vig | Lyn | 0.0346504500 |
| Ale | Lys | 0.0886687659 |
| Ber | Lys | 0.0121705106 |
| Brd | Lys | 0.0180182736 |
| Cor | Lys | 0.0365251902 |
| Cro | Lys | 0.0187041228 |
| Eye | Lys | 0.0209144081 |
| Flo | Lys | 0.0078503044 |
| Gul | Lys | 0.0111610964 |
| Heb | Lys | 0.0324918216 |
| Hel | Lys | 0.0115182415 |
| Hoo | Lys | 0.0242095570 |
| Idr16 | Lys | 0.0441556815 |
| Idr17 | Lys | 0.0654471489 |
| Iom | Lys | 0.0332398236 |
| Ios | Lys | 0.0326065494 |
| Jer | Lys | 0.0238938273 |
| Kav | Lys | 0.0090583521 |
| Kil | Lys | 0.0348484535 |
| Laz | Lys | 0.1923105604 |
| Loo | Lys | 0.0327541755 |
| Lyn | Lys | 0.0371835411 |
| Lys | Lys | 0.0000000000 |
| Mul | Lys | 0.0371753798 |
| Oos | Lys | 0.0271589412 |
| Ork | Lys | 0.0245356283 |
| Pad | Lys | 0.0278172872 |
| Pem | Lys | 0.0306870954 |
| Sar13 | Lys | 0.2503854673 |
| Sar17 | Lys | 0.1761361162 |
| Sbs | Lys | 0.0219156023 |
| She | Lys | 0.0287046803 |
| Sin | Lys | 0.0080828447 |
| Sky | Lys | 0.1042116149 |
| Sul | Lys | 0.0256128684 |
| Tar | Lys | 0.1925695902 |
| The | Lys | 0.0945581316 |
| Tor | Lys | 0.0924939191 |
| Tro | Lys | 0.0147787541 |
| Ven | Lys | 0.0320177043 |
| Vig | Lys | 0.0849467967 |
| Ale | Mul | 0.0945938938 |
| Ber | Mul | 0.0384108693 |
| Brd | Mul | 0.0231994137 |
| Cor | Mul | 0.0084828851 |
| Cro | Mul | 0.0215104641 |
| Eye | Mul | 0.0265545911 |
| Flo | Mul | 0.0399657657 |
| Gul | Mul | 0.0356471529 |
| Heb | Mul | 0.0122260785 |
| Hel | Mul | 0.0396947980 |
| Hoo | Mul | 0.0122506528 |
| Idr16 | Mul | 0.0159521258 |
| Idr17 | Mul | 0.0151651666 |
| Iom | Mul | 0.0122990246 |
| Ios | Mul | 0.0132701143 |
| Jer | Mul | 0.0141775281 |
| Kav | Mul | 0.0369482566 |
| Kil | Mul | 0.0084302830 |
| Laz | Mul | 0.1497356702 |
| Loo | Mul | 0.0083530006 |
| Lyn | Mul | 0.0117886806 |
| Lys | Mul | 0.0371753798 |
| Mul | Mul | 0.0000000000 |
| Oos | Mul | 0.0468059954 |
| Ork | Mul | 0.0115278643 |
| Pad | Mul | 0.0099149008 |
| Pem | Mul | 0.0147786285 |
| Sar13 | Mul | 0.1976387378 |
| Sar17 | Mul | 0.1409193365 |
| Sbs | Mul | 0.0144185599 |
| She | Mul | 0.0103541212 |
| Sin | Mul | 0.0353742012 |
| Sky | Mul | 0.1080255816 |
| Sul | Mul | 0.0095713789 |
| Tar | Mul | 0.1495071077 |
| The | Mul | 0.1053817272 |
| Tor | Mul | 0.1128023639 |
| Tro | Mul | 0.0344855056 |
| Ven | Mul | 0.0080814945 |
| Vig | Mul | 0.0250043330 |
| Ale | Oos | 0.1122675899 |
| Ber | Oos | 0.0316703850 |
| Brd | Oos | 0.0408708273 |
| Cor | Oos | 0.0506235649 |
| Cro | Oos | 0.0353309691 |
| Eye | Oos | 0.0351114798 |
| Flo | Oos | 0.0357459315 |
| Gul | Oos | 0.0360645814 |
| Heb | Oos | 0.0438676146 |
| Hel | Oos | 0.0335806547 |
| Hoo | Oos | 0.0405263585 |
| Idr16 | Oos | 0.0651579606 |
| Idr17 | Oos | 0.0700261543 |
| Iom | Oos | 0.0478292142 |
| Ios | Oos | 0.0511964061 |
| Jer | Oos | 0.0441179347 |
| Kav | Oos | 0.0329016091 |
| Kil | Oos | 0.0508519364 |
| Laz | Oos | 0.2122495367 |
| Loo | Oos | 0.0489893830 |
| Lyn | Oos | 0.0501914474 |
| Lys | Oos | 0.0271589412 |
| Mul | Oos | 0.0468059954 |
| Oos | Oos | 0.0000000000 |
| Ork | Oos | 0.0408934276 |
| Pad | Oos | 0.0486043608 |
| Pem | Oos | 0.0513348325 |
| Sar13 | Oos | 0.2743137498 |
| Sar17 | Oos | 0.1883743505 |
| Sbs | Oos | 0.0418753840 |
| She | Oos | 0.0467926770 |
| Sin | Oos | 0.0241046922 |
| Sky | Oos | 0.1247643860 |
| Sul | Oos | 0.0388212123 |
| Tar | Oos | 0.2147147072 |
| The | Oos | 0.1138451708 |
| Tor | Oos | 0.1149349634 |
| Tro | Oos | 0.0340063397 |
| Ven | Oos | 0.0450145490 |
| Vig | Oos | 0.0908889752 |
| Ale | Ork | 0.1054290403 |
| Ber | Ork | 0.0277996760 |
| Brd | Ork | 0.0171856576 |
| Cor | Ork | 0.0115678636 |
| Cro | Ork | 0.0168528781 |
| Eye | Ork | 0.0261856138 |
| Flo | Ork | 0.0266852571 |
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| Heb | Ork | 0.0130661787 |
| Hel | Ork | 0.0296783810 |
| Hoo | Ork | 0.0108334979 |
| Idr16 | Ork | 0.0169232337 |
| Idr17 | Ork | 0.0300392827 |
| Iom | Ork | 0.0159151795 |
| Ios | Ork | 0.0163337732 |
| Jer | Ork | 0.0091872169 |
| Kav | Ork | 0.0238212733 |
| Kil | Ork | 0.0118164708 |
| Laz | Ork | 0.1796683303 |
| Loo | Ork | 0.0138762427 |
| Lyn | Ork | 0.0170908813 |
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| Pad | Ork | 0.0090189564 |
| Pem | Ork | 0.0110400937 |
| Sar13 | Ork | 0.2355855771 |
| Sar17 | Ork | 0.1670217520 |
| Sbs | Ork | 0.0081972057 |
| She | Ork | 0.0094694910 |
| Sin | Ork | 0.0268469940 |
| Sky | Ork | 0.1248584347 |
| Sul | Ork | 0.0076620916 |
| Tar | Ork | 0.1787027970 |
| The | Ork | 0.1169530817 |
| Tor | Ork | 0.1230172054 |
| Tro | Ork | 0.0268793791 |
| Ven | Ork | 0.0083064887 |
| Vig | Ork | 0.0436223476 |
| Ale | Pad | 0.1030540121 |
| Ber | Pad | 0.0344957891 |
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| Cor | Pad | 0.0091242364 |
| Cro | Pad | 0.0200600911 |
| Eye | Pad | 0.0271466779 |
| Flo | Pad | 0.0315517357 |
| Gul | Pad | 0.0297295441 |
| Heb | Pad | 0.0105206602 |
| Hel | Pad | 0.0339162479 |
| Hoo | Pad | 0.0103834317 |
| Idr16 | Pad | 0.0127363910 |
| Idr17 | Pad | 0.0220500232 |
| Iom | Pad | 0.0137081686 |
| Ios | Pad | 0.0092341525 |
| Jer | Pad | 0.0120006148 |
| Kav | Pad | 0.0320727359 |
| Kil | Pad | 0.0098476589 |
| Laz | Pad | 0.1665573835 |
| Loo | Pad | 0.0097501547 |
| Lyn | Pad | 0.0128468932 |
| Lys | Pad | 0.0278172872 |
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| Oos | Pad | 0.0486043608 |
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| Pad | Pad | 0.0000000000 |
| Pem | Pad | 0.0115934207 |
| Sar13 | Pad | 0.2156429117 |
| Sar17 | Pad | 0.1518251908 |
| Sbs | Pad | 0.0102647428 |
| She | Pad | 0.0066932898 |
| Sin | Pad | 0.0313279147 |
| Sky | Pad | 0.1191552918 |
| Sul | Pad | 0.0082679469 |
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| Tor | Pad | 0.1226008130 |
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| Vig | Pad | 0.0330719965 |
| Ale | Pem | 0.1021363979 |
| Ber | Pem | 0.0362822623 |
| Brd | Pem | 0.0219760209 |
| Cor | Pem | 0.0114165238 |
| Cro | Pem | 0.0228036431 |
| Eye | Pem | 0.0312992791 |
| Flo | Pem | 0.0305780351 |
| Gul | Pem | 0.0335938479 |
| Heb | Pem | 0.0111143142 |
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| Hoo | Pem | 0.0100640226 |
| Idr16 | Pem | 0.0129042793 |
| Idr17 | Pem | 0.0312178820 |
| Iom | Pem | 0.0111105527 |
| Ios | Pem | 0.0116028132 |
| Jer | Pem | 0.0094675723 |
| Kav | Pem | 0.0272354826 |
| Kil | Pem | 0.0113766577 |
| Laz | Pem | 0.1672309112 |
| Loo | Pem | 0.0161726073 |
| Lyn | Pem | 0.0168326274 |
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| Mul | Pem | 0.0147786285 |
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| Pem | Pem | 0.0000000000 |
| Sar13 | Pem | 0.2202404531 |
| Sar17 | Pem | 0.1587222751 |
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| She | Pem | 0.0106920317 |
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| Sky | Pem | 0.1218127484 |
| Sul | Pem | 0.0124746922 |
| Tar | Pem | 0.1678063284 |
| The | Pem | 0.1152617970 |
| Tor | Pem | 0.1247460553 |
| Tro | Pem | 0.0342781467 |
| Ven | Pem | 0.0091002732 |
| Vig | Pem | 0.0393664482 |
| Ale | Sar13 | 0.1163092828 |
| Ber | Sar13 | 0.2649497377 |
| Brd | Sar13 | 0.2482599627 |
| Cor | Sar13 | 0.1927529561 |
| Cro | Sar13 | 0.2518008028 |
| Eye | Sar13 | 0.2284520706 |
| Flo | Sar13 | 0.2554234294 |
| Gul | Sar13 | 0.2498561607 |
| Heb | Sar13 | 0.2288957946 |
| Hel | Sar13 | 0.2599616841 |
| Hoo | Sar13 | 0.2247078691 |
| Idr16 | Sar13 | 0.1886977036 |
| Idr17 | Sar13 | 0.1789199009 |
| Iom | Sar13 | 0.2049556507 |
| Ios | Sar13 | 0.1859684173 |
| Jer | Sar13 | 0.2302235607 |
| Kav | Sar13 | 0.2321546667 |
| Kil | Sar13 | 0.2052660683 |
| Laz | Sar13 | 0.0622923282 |
| Loo | Sar13 | 0.1865585722 |
| Lyn | Sar13 | 0.2094887943 |
| Lys | Sar13 | 0.2503854673 |
| Mul | Sar13 | 0.1976387378 |
| Oos | Sar13 | 0.2743137498 |
| Ork | Sar13 | 0.2355855771 |
| Pad | Sar13 | 0.2156429117 |
| Pem | Sar13 | 0.2202404531 |
| Sar13 | Sar13 | 0.0000000000 |
| Sar17 | Sar13 | 0.0428112024 |
| Sbs | Sar13 | 0.2349475006 |
| She | Sar13 | 0.2165021164 |
| Sin | Sar13 | 0.2443623636 |
| Sky | Sar13 | 0.1299485521 |
| Sul | Sar13 | 0.2414782016 |
| Tar | Sar13 | 0.0602241958 |
| The | Sar13 | 0.1384594895 |
| Tor | Sar13 | 0.1440403945 |
| Tro | Sar13 | 0.2506525877 |
| Ven | Sar13 | 0.2309723779 |
| Vig | Sar13 | 0.1386207945 |
| Ale | Sar17 | 0.0723525493 |
| Ber | Sar17 | 0.1871078765 |
| Brd | Sar17 | 0.1755335811 |
| Cor | Sar17 | 0.1361852702 |
| Cro | Sar17 | 0.1824048857 |
| Eye | Sar17 | 0.1605820914 |
| Flo | Sar17 | 0.1823407969 |
| Gul | Sar17 | 0.1738821901 |
| Heb | Sar17 | 0.1590566989 |
| Hel | Sar17 | 0.1814571059 |
| Hoo | Sar17 | 0.1558645105 |
| Idr16 | Sar17 | 0.1383811561 |
| Idr17 | Sar17 | 0.1253794018 |
| Iom | Sar17 | 0.1454751577 |
| Ios | Sar17 | 0.1251631143 |
| Jer | Sar17 | 0.1619051196 |
| Kav | Sar17 | 0.1669743870 |
| Kil | Sar17 | 0.1458617129 |
| Laz | Sar17 | 0.0420529920 |
| Loo | Sar17 | 0.1316356781 |
| Lyn | Sar17 | 0.1464450029 |
| Lys | Sar17 | 0.1761361162 |
| Mul | Sar17 | 0.1409193365 |
| Oos | Sar17 | 0.1883743505 |
| Ork | Sar17 | 0.1670217520 |
| Pad | Sar17 | 0.1518251908 |
| Pem | Sar17 | 0.1587222751 |
| Sar13 | Sar17 | 0.0428112024 |
| Sar17 | Sar17 | 0.0000000000 |
| Sbs | Sar17 | 0.1689948199 |
| She | Sar17 | 0.1493536022 |
| Sin | Sar17 | 0.1696225237 |
| Sky | Sar17 | 0.0807695651 |
| Sul | Sar17 | 0.1670520046 |
| Tar | Sar17 | 0.0411460357 |
| The | Sar17 | 0.0828645038 |
| Tor | Sar17 | 0.0908717625 |
| Tro | Sar17 | 0.1768719486 |
| Ven | Sar17 | 0.1644150228 |
| Vig | Sar17 | 0.0943707499 |
| Ale | Sbs | 0.0973882600 |
| Ber | Sbs | 0.0264688283 |
| Brd | Sbs | 0.0168931793 |
| Cor | Sbs | 0.0111925671 |
| Cro | Sbs | 0.0154462897 |
| Eye | Sbs | 0.0242850505 |
| Flo | Sbs | 0.0253970970 |
| Gul | Sbs | 0.0262653110 |
| Heb | Sbs | 0.0104118231 |
| Hel | Sbs | 0.0281359567 |
| Hoo | Sbs | 0.0074189129 |
| Idr16 | Sbs | 0.0147584041 |
| Idr17 | Sbs | 0.0338969962 |
| Iom | Sbs | 0.0115202626 |
| Ios | Sbs | 0.0120683344 |
| Jer | Sbs | 0.0100465938 |
| Kav | Sbs | 0.0213558627 |
| Kil | Sbs | 0.0134052013 |
| Laz | Sbs | 0.1783286970 |
| Loo | Sbs | 0.0136310838 |
| Lyn | Sbs | 0.0154693247 |
| Lys | Sbs | 0.0219156023 |
| Mul | Sbs | 0.0144185599 |
| Oos | Sbs | 0.0418753840 |
| Ork | Sbs | 0.0081972057 |
| Pad | Sbs | 0.0102647428 |
| Pem | Sbs | 0.0099848690 |
| Sar13 | Sbs | 0.2349475006 |
| Sar17 | Sbs | 0.1689948199 |
| Sbs | Sbs | 0.0000000000 |
| She | Sbs | 0.0077565797 |
| Sin | Sbs | 0.0226998601 |
| Sky | Sbs | 0.1143682581 |
| Sul | Sbs | 0.0079390219 |
| Tar | Sbs | 0.1777148683 |
| The | Sbs | 0.1068032879 |
| Tor | Sbs | 0.1142666161 |
| Tro | Sbs | 0.0243088505 |
| Ven | Sbs | 0.0076024309 |
| Vig | Sbs | 0.0454413543 |
| Ale | She | 0.0975391464 |
| Ber | She | 0.0321924038 |
| Brd | She | 0.0173292834 |
| Cor | She | 0.0090686933 |
| Cro | She | 0.0193553654 |
| Eye | She | 0.0268646743 |
| Flo | She | 0.0315505060 |
| Gul | She | 0.0298163155 |
| Heb | She | 0.0093813001 |
| Hel | She | 0.0320881515 |
| Hoo | She | 0.0104684038 |
| Idr16 | She | 0.0126309030 |
| Idr17 | She | 0.0223763871 |
| Iom | She | 0.0102721021 |
| Ios | She | 0.0102556589 |
| Jer | She | 0.0091597234 |
| Kav | She | 0.0286710990 |
| Kil | She | 0.0083256447 |
| Laz | She | 0.1667766819 |
| Loo | She | 0.0099930006 |
| Lyn | She | 0.0116241850 |
| Lys | She | 0.0287046803 |
| Mul | She | 0.0103541212 |
| Oos | She | 0.0467926770 |
| Ork | She | 0.0094694910 |
| Pad | She | 0.0066932898 |
| Pem | She | 0.0106920317 |
| Sar13 | She | 0.2165021164 |
| Sar17 | She | 0.1493536022 |
| Sbs | She | 0.0077565797 |
| She | She | 0.0000000000 |
| Sin | She | 0.0304450897 |
| Sky | She | 0.1132835888 |
| Sul | She | 0.0084874020 |
| Tar | She | 0.1658673220 |
| The | She | 0.1063632516 |
| Tor | She | 0.1153090932 |
| Tro | She | 0.0293254808 |
| Ven | She | 0.0066601512 |
| Vig | She | 0.0333857198 |
| Ale | Sin | 0.0869085737 |
| Ber | Sin | 0.0137039144 |
| Brd | Sin | 0.0202715219 |
| Cor | Sin | 0.0383955879 |
| Cro | Sin | 0.0185994573 |
| Eye | Sin | 0.0232520703 |
| Flo | Sin | 0.0085235069 |
| Gul | Sin | 0.0129074865 |
| Heb | Sin | 0.0304029113 |
| Hel | Sin | 0.0137134424 |
| Hoo | Sin | 0.0229224297 |
| Idr16 | Sin | 0.0441637166 |
| Idr17 | Sin | 0.0665835830 |
| Iom | Sin | 0.0313876163 |
| Ios | Sin | 0.0316873862 |
| Jer | Sin | 0.0278916212 |
| Kav | Sin | 0.0082166945 |
| Kil | Sin | 0.0369454503 |
| Laz | Sin | 0.1893006033 |
| Loo | Sin | 0.0333366554 |
| Lyn | Sin | 0.0352216181 |
| Lys | Sin | 0.0080828447 |
| Mul | Sin | 0.0353742012 |
| Oos | Sin | 0.0241046922 |
| Ork | Sin | 0.0268469940 |
| Pad | Sin | 0.0313279147 |
| Pem | Sin | 0.0314602481 |
| Sar13 | Sin | 0.2443623636 |
| Sar17 | Sin | 0.1696225237 |
| Sbs | Sin | 0.0226998601 |
| She | Sin | 0.0304450897 |
| Sin | Sin | 0.0000000000 |
| Sky | Sin | 0.1048783202 |
| Sul | Sin | 0.0271816682 |
| Tar | Sin | 0.1903549655 |
| The | Sin | 0.0943799161 |
| Tor | Sin | 0.0936783264 |
| Tro | Sin | 0.0169246790 |
| Ven | Sin | 0.0304032441 |
| Vig | Sin | 0.0871302356 |
| Ale | Sky | 0.0116398149 |
| Ber | Sky | 0.1055108745 |
| Brd | Sky | 0.1130460982 |
| Cor | Sky | 0.1037473146 |
| Cro | Sky | 0.1146682847 |
| Eye | Sky | 0.1016017797 |
| Flo | Sky | 0.1170752158 |
| Gul | Sky | 0.0986278319 |
| Heb | Sky | 0.1201053115 |
| Hel | Sky | 0.1067069052 |
| Hoo | Sky | 0.1106918329 |
| Idr16 | Sky | 0.1223751872 |
| Idr17 | Sky | 0.1122479654 |
| Iom | Sky | 0.1024131855 |
| Ios | Sky | 0.0944718617 |
| Jer | Sky | 0.1201883914 |
| Kav | Sky | 0.0986271476 |
| Kil | Sky | 0.1193683927 |
| Laz | Sky | 0.1096001588 |
| Loo | Sky | 0.1038996980 |
| Lyn | Sky | 0.1051321129 |
| Lys | Sky | 0.1042116149 |
| Mul | Sky | 0.1080255816 |
| Oos | Sky | 0.1247643860 |
| Ork | Sky | 0.1248584347 |
| Pad | Sky | 0.1191552918 |
| Pem | Sky | 0.1218127484 |
| Sar13 | Sky | 0.1299485521 |
| Sar17 | Sky | 0.0807695651 |
| Sbs | Sky | 0.1143682581 |
| She | Sky | 0.1132835888 |
| Sin | Sky | 0.1048783202 |
| Sky | Sky | 0.0000000000 |
| Sul | Sky | 0.1198226724 |
| Tar | Sky | 0.1091067496 |
| The | Sky | 0.0072323839 |
| Tor | Sky | 0.0116644857 |
| Tro | Sky | 0.1084944944 |
| Ven | Sky | 0.1239196923 |
| Vig | Sky | 0.1079501675 |
| Ale | Sul | 0.1064713020 |
| Ber | Sul | 0.0288717718 |
| Brd | Sul | 0.0173033314 |
| Cor | Sul | 0.0120609558 |
| Cro | Sul | 0.0169236685 |
| Eye | Sul | 0.0208128773 |
| Flo | Sul | 0.0296341511 |
| Gul | Sul | 0.0268660165 |
| Heb | Sul | 0.0093004828 |
| Hel | Sul | 0.0284064748 |
| Hoo | Sul | 0.0090103549 |
| Idr16 | Sul | 0.0168474427 |
| Idr17 | Sul | 0.0263301144 |
| Iom | Sul | 0.0119206014 |
| Ios | Sul | 0.0129822254 |
| Jer | Sul | 0.0095500857 |
| Kav | Sul | 0.0286973843 |
| Kil | Sul | 0.0096259031 |
| Laz | Sul | 0.1758896706 |
| Loo | Sul | 0.0109764397 |
| Lyn | Sul | 0.0151357213 |
| Lys | Sul | 0.0256128684 |
| Mul | Sul | 0.0095713789 |
| Oos | Sul | 0.0388212123 |
| Ork | Sul | 0.0076620916 |
| Pad | Sul | 0.0082679469 |
| Pem | Sul | 0.0124746922 |
| Sar13 | Sul | 0.2414782016 |
| Sar17 | Sul | 0.1670520046 |
| Sbs | Sul | 0.0079390219 |
| She | Sul | 0.0084874020 |
| Sin | Sul | 0.0271816682 |
| Sky | Sul | 0.1198226724 |
| Sul | Sul | 0.0000000000 |
| Tar | Sul | 0.1759107348 |
| The | Sul | 0.1112932958 |
| Tor | Sul | 0.1192491735 |
| Tro | Sul | 0.0253348953 |
| Ven | Sul | 0.0073572057 |
| Vig | Sul | 0.0388289732 |
| Ale | Tar | 0.1013354485 |
| Ber | Tar | 0.2034225691 |
| Brd | Tar | 0.1861373837 |
| Cor | Tar | 0.1479676146 |
| Cro | Tar | 0.1879062916 |
| Eye | Tar | 0.1732290391 |
| Flo | Tar | 0.1980859293 |
| Gul | Tar | 0.1935203000 |
| Heb | Tar | 0.1719046792 |
| Hel | Tar | 0.1980303680 |
| Hoo | Tar | 0.1658558319 |
| Idr16 | Tar | 0.1407085365 |
| Idr17 | Tar | 0.1351938911 |
| Iom | Tar | 0.1560415301 |
| Ios | Tar | 0.1402230626 |
| Jer | Tar | 0.1666592537 |
| Kav | Tar | 0.1757010436 |
| Kil | Tar | 0.1527926452 |
| Laz | Tar | 0.0009557344 |
| Loo | Tar | 0.1343311538 |
| Lyn | Tar | 0.1644810454 |
| Lys | Tar | 0.1925695902 |
| Mul | Tar | 0.1495071077 |
| Oos | Tar | 0.2147147072 |
| Ork | Tar | 0.1787027970 |
| Pad | Tar | 0.1665835254 |
| Pem | Tar | 0.1678063284 |
| Sar13 | Tar | 0.0602241958 |
| Sar17 | Tar | 0.0411460357 |
| Sbs | Tar | 0.1777148683 |
| She | Tar | 0.1658673220 |
| Sin | Tar | 0.1903549655 |
| Sky | Tar | 0.1091067496 |
| Sul | Tar | 0.1759107348 |
| Tar | Tar | 0.0000000000 |
| The | Tar | 0.1128138506 |
| Tor | Tar | 0.1221579201 |
| Tro | Tar | 0.1884638327 |
| Ven | Tar | 0.1703958870 |
| Vig | Tar | 0.1039488707 |
| Ale | The | 0.0107562313 |
| Ber | The | 0.0946710215 |
| Brd | The | 0.1050215912 |
| Cor | The | 0.1010356924 |
| Cro | The | 0.1060894729 |
| Eye | The | 0.0952110924 |
| Flo | The | 0.1048153346 |
| Gul | The | 0.0892436919 |
| Heb | The | 0.1115759398 |
| Hel | The | 0.0977602058 |
| Hoo | The | 0.1028225030 |
| Idr16 | The | 0.1141673718 |
| Idr17 | The | 0.1116984286 |
| Iom | The | 0.0963135315 |
| Ios | The | 0.0909936731 |
| Jer | The | 0.1088349498 |
| Kav | The | 0.0867641829 |
| Kil | The | 0.1137385140 |
| Laz | The | 0.1128239304 |
| Loo | The | 0.1006063379 |
| Lyn | The | 0.1013878753 |
| Lys | The | 0.0945581316 |
| Mul | The | 0.1053817272 |
| Oos | The | 0.1138451708 |
| Ork | The | 0.1169530817 |
| Pad | The | 0.1148367477 |
| Pem | The | 0.1152617970 |
| Sar13 | The | 0.1384594895 |
| Sar17 | The | 0.0828645038 |
| Sbs | The | 0.1068032879 |
| She | The | 0.1063632516 |
| Sin | The | 0.0943799161 |
| Sky | The | 0.0072323839 |
| Sul | The | 0.1112932958 |
| Tar | The | 0.1128138506 |
| The | The | 0.0000000000 |
| Tor | The | 0.0107664780 |
| Tro | The | 0.0974802229 |
| Ven | The | 0.1179116299 |
| Vig | The | 0.1089097825 |
| Ale | Tor | 0.0170791442 |
| Ber | Tor | 0.0948886514 |
| Brd | Tor | 0.1072971086 |
| Cor | Tor | 0.1111834653 |
| Cro | Tor | 0.1065992175 |
| Eye | Tor | 0.0968898117 |
| Flo | Tor | 0.1074757253 |
| Gul | Tor | 0.0901497429 |
| Heb | Tor | 0.1212784982 |
| Hel | Tor | 0.0965359416 |
| Hoo | Tor | 0.1107245754 |
| Idr16 | Tor | 0.1274376154 |
| Idr17 | Tor | 0.1254954578 |
| Iom | Tor | 0.1070116260 |
| Ios | Tor | 0.1006665481 |
| Jer | Tor | 0.1174547504 |
| Kav | Tor | 0.0885746319 |
| Kil | Tor | 0.1230056986 |
| Laz | Tor | 0.1227513094 |
| Loo | Tor | 0.1090865825 |
| Lyn | Tor | 0.1107920179 |
| Lys | Tor | 0.0924939191 |
| Mul | Tor | 0.1128023639 |
| Oos | Tor | 0.1149349634 |
| Ork | Tor | 0.1230172054 |
| Pad | Tor | 0.1226008130 |
| Pem | Tor | 0.1247460553 |
| Sar13 | Tor | 0.1440403945 |
| Sar17 | Tor | 0.0908717625 |
| Sbs | Tor | 0.1142666161 |
| She | Tor | 0.1153090932 |
| Sin | Tor | 0.0936783264 |
| Sky | Tor | 0.0116644857 |
| Sul | Tor | 0.1192491735 |
| Tar | Tor | 0.1221579201 |
| The | Tor | 0.0107664780 |
| Tor | Tor | 0.0000000000 |
| Tro | Tor | 0.0998235578 |
| Ven | Tor | 0.1272994717 |
| Vig | Tor | 0.1230931466 |
| Ale | Tro | 0.0943370854 |
| Ber | Tro | 0.0086869776 |
| Brd | Tro | 0.0145653613 |
| Cor | Tro | 0.0365719576 |
| Cro | Tro | 0.0138090747 |
| Eye | Tro | 0.0233721677 |
| Flo | Tro | 0.0190541907 |
| Gul | Tro | 0.0099578392 |
| Heb | Tro | 0.0338294505 |
| Hel | Tro | 0.0110160538 |
| Hoo | Tro | 0.0257425675 |
| Idr16 | Tro | 0.0441626613 |
| Idr17 | Tro | 0.0608528934 |
| Iom | Tro | 0.0345351433 |
| Ios | Tro | 0.0314658851 |
| Jer | Tro | 0.0255761029 |
| Kav | Tro | 0.0184817752 |
| Kil | Tro | 0.0354462612 |
| Laz | Tro | 0.1875904321 |
| Loo | Tro | 0.0292856585 |
| Lyn | Tro | 0.0279760369 |
| Lys | Tro | 0.0147787541 |
| Mul | Tro | 0.0344855056 |
| Oos | Tro | 0.0340063397 |
| Ork | Tro | 0.0268793791 |
| Pad | Tro | 0.0317427242 |
| Pem | Tro | 0.0342781467 |
| Sar13 | Tro | 0.2506525877 |
| Sar17 | Tro | 0.1768719486 |
| Sbs | Tro | 0.0243088505 |
| She | Tro | 0.0293254808 |
| Sin | Tro | 0.0169246790 |
| Sky | Tro | 0.1084944944 |
| Sul | Tro | 0.0253348953 |
| Tar | Tro | 0.1884638327 |
| The | Tro | 0.0974802229 |
| Tor | Tro | 0.0998235578 |
| Tro | Tro | 0.0000000000 |
| Ven | Tro | 0.0311181656 |
| Vig | Tro | 0.0798638360 |
| Ale | Ven | 0.1096439663 |
| Ber | Ven | 0.0348728851 |
| Brd | Ven | 0.0209516549 |
| Cor | Ven | 0.0094617681 |
| Cro | Ven | 0.0184137850 |
| Eye | Ven | 0.0273790674 |
| Flo | Ven | 0.0345605159 |
| Gul | Ven | 0.0333601394 |
| Heb | Ven | 0.0064302609 |
| Hel | Ven | 0.0346234940 |
| Hoo | Ven | 0.0091398708 |
| Idr16 | Ven | 0.0131076620 |
| Idr17 | Ven | 0.0242676572 |
| Iom | Ven | 0.0113586862 |
| Ios | Ven | 0.0120223814 |
| Jer | Ven | 0.0095719451 |
| Kav | Ven | 0.0306487495 |
| Kil | Ven | 0.0077462383 |
| Laz | Ven | 0.1708795034 |
| Loo | Ven | 0.0101862576 |
| Lyn | Ven | 0.0128666044 |
| Lys | Ven | 0.0320177043 |
| Mul | Ven | 0.0080814945 |
| Oos | Ven | 0.0450145490 |
| Ork | Ven | 0.0083064887 |
| Pad | Ven | 0.0096953414 |
| Pem | Ven | 0.0091002732 |
| Sar13 | Ven | 0.2309723779 |
| Sar17 | Ven | 0.1644150228 |
| Sbs | Ven | 0.0076024309 |
| She | Ven | 0.0066601512 |
| Sin | Ven | 0.0304032441 |
| Sky | Ven | 0.1239196923 |
| Sul | Ven | 0.0073572057 |
| Tar | Ven | 0.1703958870 |
| The | Ven | 0.1179116299 |
| Tor | Ven | 0.1272994717 |
| Tro | Ven | 0.0311181656 |
| Ven | Ven | 0.0000000000 |
| Vig | Ven | 0.0357615821 |
| Ale | Vig | 0.0989357115 |
| Ber | Vig | 0.0895282099 |
| Brd | Vig | 0.0617857601 |
| Cor | Vig | 0.0240719784 |
| Cro | Vig | 0.0673779813 |
| Eye | Vig | 0.0643694489 |
| Flo | Vig | 0.0920903221 |
| Gul | Vig | 0.0840863944 |
| Heb | Vig | 0.0359450901 |
| Hel | Vig | 0.0890101156 |
| Hoo | Vig | 0.0404046298 |
| Idr16 | Vig | 0.0261650766 |
| Idr17 | Vig | 0.0154178378 |
| Iom | Vig | 0.0369139690 |
| Ios | Vig | 0.0309964044 |
| Jer | Vig | 0.0427478292 |
| Kav | Vig | 0.0846421334 |
| Kil | Vig | 0.0264527402 |
| Laz | Vig | 0.1045974400 |
| Loo | Vig | 0.0250364964 |
| Lyn | Vig | 0.0346504500 |
| Lys | Vig | 0.0849467967 |
| Mul | Vig | 0.0250043330 |
| Oos | Vig | 0.0908889752 |
| Ork | Vig | 0.0436223476 |
| Pad | Vig | 0.0330719965 |
| Pem | Vig | 0.0393664482 |
| Sar13 | Vig | 0.1386207945 |
| Sar17 | Vig | 0.0943707499 |
| Sbs | Vig | 0.0454413543 |
| She | Vig | 0.0333857198 |
| Sin | Vig | 0.0871302356 |
| Sky | Vig | 0.1079501675 |
| Sul | Vig | 0.0388289732 |
| Tar | Vig | 0.1039488707 |
| The | Vig | 0.1089097825 |
| Tor | Vig | 0.1230931466 |
| Tro | Vig | 0.0798638360 |
| Ven | Vig | 0.0357615821 |
| Vig | Vig | 0.0000000000 |

## alle freq table

| **Var1** | **Var2** | **value** |
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| Ale04 | Genotype3441.G | 2 |
| Ale05 | Genotype3441.G | 1 |
| Ale06 | Genotype3441.G |  |
| Ale08 | Genotype3441.G |  |
| Ale13 | Genotype3441.G | 2 |
| Ale04 | Genotype3441.A | 0 |
| Ale05 | Genotype3441.A | 1 |
| Ale06 | Genotype3441.A |  |
| Ale08 | Genotype3441.A |  |
| Ale13 | Genotype3441.A | 0 |
| Ale04 | Genotype4173.C |  |
| Ale05 | Genotype4173.C | 2 |
| Ale06 | Genotype4173.C | 2 |
| Ale08 | Genotype4173.C | 0 |
| Ale13 | Genotype4173.C |  |
| Ale04 | Genotype4173.T |  |
| Ale05 | Genotype4173.T | 0 |
| Ale06 | Genotype4173.T | 0 |
| Ale08 | Genotype4173.T | 2 |
| Ale13 | Genotype4173.T |  |
| Ale04 | Genotype6157.G |  |
| Ale05 | Genotype6157.G | 1 |
| Ale06 | Genotype6157.G | 2 |
| Ale08 | Genotype6157.G | 2 |
| Ale13 | Genotype6157.G | 2 |
| Ale04 | Genotype6157.C |  |
| Ale05 | Genotype6157.C | 1 |
| Ale06 | Genotype6157.C | 0 |
| Ale08 | Genotype6157.C | 0 |
| Ale13 | Genotype6157.C | 0 |
| Ale04 | Genotype7502.T |  |
| Ale05 | Genotype7502.T | 2 |
| Ale06 | Genotype7502.T |  |
| Ale08 | Genotype7502.T | 2 |
| Ale13 | Genotype7502.T |  |
| Ale04 | Genotype7502.C |  |
| Ale05 | Genotype7502.C | 0 |
| Ale06 | Genotype7502.C |  |
| Ale08 | Genotype7502.C | 0 |
| Ale13 | Genotype7502.C |  |
| Ale04 | Genotype7892.T | 2 |
| Ale05 | Genotype7892.T | 1 |
| Ale06 | Genotype7892.T | 2 |
| Ale08 | Genotype7892.T |  |
| Ale13 | Genotype7892.T | 2 |
| Ale04 | Genotype7892.A | 0 |
| Ale05 | Genotype7892.A | 1 |
| Ale06 | Genotype7892.A | 0 |
| Ale08 | Genotype7892.A |  |
| Ale13 | Genotype7892.A | 0 |

## alle number table

| **Var1** | **Var2** | **value** |
| --- | --- | --- |
| Genotype3441 | 1 | 2 |
| Genotype4173 | 1 | 2 |
| Genotype6157 | 1 | 2 |
| Genotype7502 | 1 | 2 |
| Genotype7892 | 1 | 2 |
| Genotype8953 | 1 | 2 |
| Genotype9441 | 1 | 2 |
| Genotype11071 | 1 | 2 |
| Genotype11183 | 1 | 2 |
| Genotype11291 | 1 | 2 |
| Genotype12971 | 1 | 2 |
| Genotype14047 | 1 | 2 |
| Genotype14742 | 1 | 2 |
| Genotype15109 | 1 | 2 |
| Genotype15128 | 1 | 2 |
| Genotype15435 | 1 | 2 |
| Genotype15531 | 1 | 2 |
| Genotype15581 | 1 | 2 |
| Genotype18512 | 1 | 2 |
| Genotype18652 | 1 | 2 |
| Genotype19266 | 1 | 2 |
| Genotype19460 | 1 | 2 |
| Genotype20354 | 1 | 2 |
| Genotype21197 | 1 | 2 |
| Genotype21880 | 1 | 2 |
| Genotype22323 | 1 | 2 |
| Genotype22365 | 1 | 2 |
| Genotype22740 | 1 | 2 |
| Genotype23146 | 1 | 2 |
| Genotype23447 | 1 | 2 |
| Genotype23481 | 1 | 2 |
| Genotype23677 | 1 | 2 |
| Genotype23787 | 1 | 2 |
| Genotype24020 | 1 | 2 |
| Genotype25229 | 1 | 2 |
| Genotype25608 | 1 | 2 |
| Genotype27329 | 1 | 2 |
| Genotype28357 | 1 | 2 |
| Genotype29410 | 1 | 2 |
| Genotype29801 | 1 | 2 |
| Genotype29889 | 1 | 2 |
| Genotype30339 | 1 | 2 |
| Genotype31462 | 1 | 2 |
| Genotype31618 | 1 | 2 |
| Genotype31967 | 1 | 2 |
| Genotype31979 | 1 | 2 |
| Genotype32358 | 1 | 2 |
| Genotype32435 | 1 | 2 |
| Genotype33066 | 1 | 2 |
| Genotype33784 | 1 | 2 |
| Genotype34443 | 1 | 2 |
| Genotype34818 | 1 | 2 |
| Genotype35584 | 1 | 2 |
| Genotype36910 | 1 | 2 |
| Genotype39107 | 1 | 2 |
| Genotype39876 | 1 | 2 |
| Genotype41521 | 1 | 2 |
| Genotype42395 | 1 | 2 |
| Genotype42529 | 1 | 2 |
| Genotype42821 | 1 | 2 |
| Genotype44670 | 1 | 2 |
| Genotype45154 | 1 | 2 |
| Genotype45217 | 1 | 2 |
| Genotype51159 | 1 | 2 |
| Genotype51507 | 1 | 2 |
| Genotype53052 | 1 | 2 |
| Genotype53263 | 1 | 2 |
| Genotype53314 | 1 | 2 |
| Genotype53720 | 1 | 2 |
| Genotype53889 | 1 | 1 |
| Genotype53935 | 1 | 2 |
| Genotype54240 | 1 | 2 |
| Genotype54762 | 1 | 2 |
| Genotype55111 | 1 | 2 |
| Genotype55142 | 1 | 2 |
| Genotype55564 | 1 | 2 |
| Genotype56423 | 1 | 2 |
| Genotype56785 | 1 | 2 |
| Genotype57131 | 1 | 2 |
| Genotype57989 | 1 | 2 |
| Genotype58053 | 1 | 2 |
| Genotype59503 | 1 | 2 |
| Genotype59586 | 1 | 2 |
| Genotype59967 | 1 | 2 |
| Genotype60546 | 1 | 2 |
| Genotype63140 | 1 | 2 |
| Genotype63267 | 1 | 2 |
| Genotype63581 | 1 | 2 |
| Genotype63605 | 1 | 2 |
| Genotype63771 | 1 | 2 |
| Genotype63798 | 1 | 2 |
| Genotype65064 | 1 | 2 |
| Genotype65576 | 1 | 2 |

## HW Test Table

| **Var1** | **Var2** | **value** |
| --- | --- | --- |
| Genotype3441 | chi^2 | 0.262321998169822878655 |
| Genotype4173 | chi^2 | 2.401123775039421648358 |
| Genotype6157 | chi^2 | 4.479559616823544310193 |
| Genotype7502 | chi^2 | 7.567709515584314594605 |
| Genotype7892 | chi^2 | 3.034051501294861896696 |
| Genotype8953 | chi^2 | 400.425279503841466066660 |
| Genotype9441 | chi^2 | 0.046656796297855414324 |
| Genotype11071 | chi^2 | 3.848415179015473697177 |
| Genotype11183 | chi^2 | 1.577583799788482288307 |
| Genotype11291 | chi^2 | 96.071699464781033839245 |
| Genotype12971 | chi^2 | 8.536324927030872089517 |
| Genotype14047 | chi^2 | 1.516497270233654326432 |
| Genotype14742 | chi^2 | 17.710437160310366522253 |
| Genotype15109 | chi^2 | 0.003968569390621430083 |
| Genotype15128 | chi^2 | 6.629709316570146171443 |
| Genotype15435 | chi^2 | 1.386267475685308392386 |
| Genotype15531 | chi^2 | 8.733212685758473980968 |
| Genotype15581 | chi^2 | 90.686828805778418427508 |
| Genotype18512 | chi^2 | 0.263299790645560582991 |
| Genotype18652 | chi^2 | 0.183034855040756838651 |
| Genotype19266 | chi^2 | 0.550484332166754519733 |
| Genotype19460 | chi^2 | 0.961808389707069721908 |
| Genotype20354 | chi^2 | 9.544489732947139870589 |
| Genotype21197 | chi^2 | 1,093.642191734533298586030 |
| Genotype21880 | chi^2 | 63.788597134865298698969 |
| Genotype22323 | chi^2 | 281.973725253773864096729 |
| Genotype22365 | chi^2 | 92.813528656312257680838 |
| Genotype22740 | chi^2 | 29.369014468923950289536 |
| Genotype23146 | chi^2 | 0.374231765770499436030 |
| Genotype23447 | chi^2 | 0.291846443633388241690 |
| Genotype23481 | chi^2 | 0.000089438770613331291 |
| Genotype23677 | chi^2 | 10.158980827694099602354 |
| Genotype23787 | chi^2 | 0.110425943841148760383 |
| Genotype24020 | chi^2 | 0.063557950263623416709 |
| Genotype25229 | chi^2 | 0.039336555940877065973 |
| Genotype25608 | chi^2 | 1.118081745573920260384 |
| Genotype27329 | chi^2 | 4.018167057333310587808 |
| Genotype28357 | chi^2 | 2.254754875299167515834 |
| Genotype29410 | chi^2 | 0.026131252911111381432 |
| Genotype29801 | chi^2 | 1.074647399936206060289 |
| Genotype29889 | chi^2 | 15.632996700689679059337 |
| Genotype30339 | chi^2 | 0.227410819991297169507 |
| Genotype31462 | chi^2 | 71.684458056876650289269 |
| Genotype31618 | chi^2 | 3.049984133922905904512 |
| Genotype31967 | chi^2 | 1.261229160546196714776 |
| Genotype31979 | chi^2 | 1.930080752344413896893 |
| Genotype32358 | chi^2 | 5.221496382236977318314 |
| Genotype32435 | chi^2 | 1.040152809831100810811 |
| Genotype33066 | chi^2 | 30.154519150426303042423 |
| Genotype33784 | chi^2 | 0.002315612924981974574 |
| Genotype34443 | chi^2 | 2.771684791292311267341 |
| Genotype34818 | chi^2 | 0.299563941332345429203 |
| Genotype35584 | chi^2 | 2.364718033642327466026 |
| Genotype36910 | chi^2 | 0.372262779731265980310 |
| Genotype39107 | chi^2 | 0.005792773881004914180 |
| Genotype39876 | chi^2 | 4.058310661295414512040 |
| Genotype41521 | chi^2 | 2.171635871896884673049 |
| Genotype42395 | chi^2 | 97.725794580145048939812 |
| Genotype42529 | chi^2 | 1.320840115126155289715 |
| Genotype42821 | chi^2 | 0.032573618519693203766 |
| Genotype44670 | chi^2 | 0.771137698624874579068 |
| Genotype45154 | chi^2 | 0.622620586602695924583 |
| Genotype45217 | chi^2 | 0.305166600666168408296 |
| Genotype51159 | chi^2 | 2.235425606606151749389 |
| Genotype51507 | chi^2 | 25.444607731955372287302 |
| Genotype53052 | chi^2 | 10.884966122519907472110 |
| Genotype53263 | chi^2 | 29.422887806486372141990 |
| Genotype53314 | chi^2 | 16.695220817669540025463 |
| Genotype53720 | chi^2 | 1.301094229634489618519 |
| Genotype53889 | chi^2 | 0.000000000000000000000 |
| Genotype53935 | chi^2 | 309.686361442011104827543 |
| Genotype54240 | chi^2 | 57.783297878201807407095 |
| Genotype54762 | chi^2 | 0.265261442225028787334 |
| Genotype55111 | chi^2 | 0.374913484535328411784 |
| Genotype55142 | chi^2 | 9.607925467635933358679 |
| Genotype55564 | chi^2 | 0.119364488095972942627 |
| Genotype56423 | chi^2 | 6.293805714285716668144 |
| Genotype56785 | chi^2 | 3.706708131453662513621 |
| Genotype57131 | chi^2 | 0.019548686106156658998 |
| Genotype57989 | chi^2 | 0.036443805247732996566 |
| Genotype58053 | chi^2 | 471.721261821575808426132 |
| Genotype59503 | chi^2 | 0.938390910831627844679 |
| Genotype59586 | chi^2 | 0.645149896626534546940 |
| Genotype59967 | chi^2 | 1.990503639214657338741 |
| Genotype60546 | chi^2 | 1.411963093078182129858 |
| Genotype63140 | chi^2 | 1.067589599495615715341 |
| Genotype63267 | chi^2 | 1.026671535439260152245 |
| Genotype63581 | chi^2 | 0.425490598004394315890 |
| Genotype63605 | chi^2 | 0.529165331860890986171 |
| Genotype63771 | chi^2 | 57.104148566618924576233 |
| Genotype63798 | chi^2 | 2.431611252939251066607 |
| Genotype65064 | chi^2 | 24.433693191955011769778 |
| Genotype65576 | chi^2 | 13.929004761759399499965 |
| Genotype3441 | df | 1.000000000000000000000 |
| Genotype4173 | df | 1.000000000000000000000 |
| Genotype6157 | df | 1.000000000000000000000 |
| Genotype7502 | df | 1.000000000000000000000 |
| Genotype7892 | df | 1.000000000000000000000 |
| Genotype8953 | df | 1.000000000000000000000 |
| Genotype9441 | df | 1.000000000000000000000 |
| Genotype11071 | df | 1.000000000000000000000 |
| Genotype11183 | df | 1.000000000000000000000 |
| Genotype11291 | df | 1.000000000000000000000 |
| Genotype12971 | df | 1.000000000000000000000 |
| Genotype14047 | df | 1.000000000000000000000 |
| Genotype14742 | df | 1.000000000000000000000 |
| Genotype15109 | df | 1.000000000000000000000 |
| Genotype15128 | df | 1.000000000000000000000 |
| Genotype15435 | df | 1.000000000000000000000 |
| Genotype15531 | df | 1.000000000000000000000 |
| Genotype15581 | df | 1.000000000000000000000 |
| Genotype18512 | df | 1.000000000000000000000 |
| Genotype18652 | df | 1.000000000000000000000 |
| Genotype19266 | df | 1.000000000000000000000 |
| Genotype19460 | df | 1.000000000000000000000 |
| Genotype20354 | df | 1.000000000000000000000 |
| Genotype21197 | df | 1.000000000000000000000 |
| Genotype21880 | df | 1.000000000000000000000 |
| Genotype22323 | df | 1.000000000000000000000 |
| Genotype22365 | df | 1.000000000000000000000 |
| Genotype22740 | df | 1.000000000000000000000 |
| Genotype23146 | df | 1.000000000000000000000 |
| Genotype23447 | df | 1.000000000000000000000 |
| Genotype23481 | df | 1.000000000000000000000 |
| Genotype23677 | df | 1.000000000000000000000 |
| Genotype23787 | df | 1.000000000000000000000 |
| Genotype24020 | df | 1.000000000000000000000 |
| Genotype25229 | df | 1.000000000000000000000 |
| Genotype25608 | df | 1.000000000000000000000 |
| Genotype27329 | df | 1.000000000000000000000 |
| Genotype28357 | df | 1.000000000000000000000 |
| Genotype29410 | df | 1.000000000000000000000 |
| Genotype29801 | df | 1.000000000000000000000 |
| Genotype29889 | df | 1.000000000000000000000 |
| Genotype30339 | df | 1.000000000000000000000 |
| Genotype31462 | df | 1.000000000000000000000 |
| Genotype31618 | df | 1.000000000000000000000 |
| Genotype31967 | df | 1.000000000000000000000 |
| Genotype31979 | df | 1.000000000000000000000 |
| Genotype32358 | df | 1.000000000000000000000 |
| Genotype32435 | df | 1.000000000000000000000 |
| Genotype33066 | df | 1.000000000000000000000 |
| Genotype33784 | df | 1.000000000000000000000 |
| Genotype34443 | df | 1.000000000000000000000 |
| Genotype34818 | df | 1.000000000000000000000 |
| Genotype35584 | df | 1.000000000000000000000 |
| Genotype36910 | df | 1.000000000000000000000 |
| Genotype39107 | df | 1.000000000000000000000 |
| Genotype39876 | df | 1.000000000000000000000 |
| Genotype41521 | df | 1.000000000000000000000 |
| Genotype42395 | df | 1.000000000000000000000 |
| Genotype42529 | df | 1.000000000000000000000 |
| Genotype42821 | df | 1.000000000000000000000 |
| Genotype44670 | df | 1.000000000000000000000 |
| Genotype45154 | df | 1.000000000000000000000 |
| Genotype45217 | df | 1.000000000000000000000 |
| Genotype51159 | df | 1.000000000000000000000 |
| Genotype51507 | df | 1.000000000000000000000 |
| Genotype53052 | df | 1.000000000000000000000 |
| Genotype53263 | df | 1.000000000000000000000 |
| Genotype53314 | df | 1.000000000000000000000 |
| Genotype53720 | df | 1.000000000000000000000 |
| Genotype53889 | df | 0.000000000000000000000 |
| Genotype53935 | df | 1.000000000000000000000 |
| Genotype54240 | df | 1.000000000000000000000 |
| Genotype54762 | df | 1.000000000000000000000 |
| Genotype55111 | df | 1.000000000000000000000 |
| Genotype55142 | df | 1.000000000000000000000 |
| Genotype55564 | df | 1.000000000000000000000 |
| Genotype56423 | df | 1.000000000000000000000 |
| Genotype56785 | df | 1.000000000000000000000 |
| Genotype57131 | df | 1.000000000000000000000 |
| Genotype57989 | df | 1.000000000000000000000 |
| Genotype58053 | df | 1.000000000000000000000 |
| Genotype59503 | df | 1.000000000000000000000 |
| Genotype59586 | df | 1.000000000000000000000 |
| Genotype59967 | df | 1.000000000000000000000 |
| Genotype60546 | df | 1.000000000000000000000 |
| Genotype63140 | df | 1.000000000000000000000 |
| Genotype63267 | df | 1.000000000000000000000 |
| Genotype63581 | df | 1.000000000000000000000 |
| Genotype63605 | df | 1.000000000000000000000 |
| Genotype63771 | df | 1.000000000000000000000 |
| Genotype63798 | df | 1.000000000000000000000 |
| Genotype65064 | df | 1.000000000000000000000 |
| Genotype65576 | df | 1.000000000000000000000 |
| Genotype3441 | Pr(chi^2 >) | 0.608529380109845585700 |
| Genotype4173 | Pr(chi^2 >) | 0.121248122384193024459 |
| Genotype6157 | Pr(chi^2 >) | 0.034302558764418900061 |
| Genotype7502 | Pr(chi^2 >) | 0.005942325281010019111 |
| Genotype7892 | Pr(chi^2 >) | 0.081534188583855637944 |
| Genotype8953 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype9441 | Pr(chi^2 >) | 0.828986310757013344919 |
| Genotype11071 | Pr(chi^2 >) | 0.049793019080394018694 |
| Genotype11183 | Pr(chi^2 >) | 0.209109071177588923263 |
| Genotype11291 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype12971 | Pr(chi^2 >) | 0.003481278241175833621 |
| Genotype14047 | Pr(chi^2 >) | 0.218150331177761613866 |
| Genotype14742 | Pr(chi^2 >) | 0.000025721145015755731 |
| Genotype15109 | Pr(chi^2 >) | 0.949769225789012239147 |
| Genotype15128 | Pr(chi^2 >) | 0.010029162975264460655 |
| Genotype15435 | Pr(chi^2 >) | 0.239036446303162231075 |
| Genotype15531 | Pr(chi^2 >) | 0.003124654520978653593 |
| Genotype15581 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype18512 | Pr(chi^2 >) | 0.607862163822668000179 |
| Genotype18652 | Pr(chi^2 >) | 0.668778002850474395657 |
| Genotype19266 | Pr(chi^2 >) | 0.458119863795310777732 |
| Genotype19460 | Pr(chi^2 >) | 0.326731675491559125923 |
| Genotype20354 | Pr(chi^2 >) | 0.002005505717464495241 |
| Genotype21197 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype21880 | Pr(chi^2 >) | 0.000000000000001332268 |
| Genotype22323 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype22365 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype22740 | Pr(chi^2 >) | 0.000000059826606890745 |
| Genotype23146 | Pr(chi^2 >) | 0.540706580869518171895 |
| Genotype23447 | Pr(chi^2 >) | 0.589039708320021393462 |
| Genotype23481 | Pr(chi^2 >) | 0.992454352756636626331 |
| Genotype23677 | Pr(chi^2 >) | 0.001435999838865220646 |
| Genotype23787 | Pr(chi^2 >) | 0.739659724992782541264 |
| Genotype24020 | Pr(chi^2 >) | 0.800958342889980245971 |
| Genotype25229 | Pr(chi^2 >) | 0.842783396100382109495 |
| Genotype25608 | Pr(chi^2 >) | 0.290331878955187083768 |
| Genotype27329 | Pr(chi^2 >) | 0.045012608325548542076 |
| Genotype28357 | Pr(chi^2 >) | 0.133204546515524713257 |
| Genotype29410 | Pr(chi^2 >) | 0.871580188743828254694 |
| Genotype29801 | Pr(chi^2 >) | 0.299898062699864853542 |
| Genotype29889 | Pr(chi^2 >) | 0.000076900912439614721 |
| Genotype30339 | Pr(chi^2 >) | 0.633450347852963835393 |
| Genotype31462 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype31618 | Pr(chi^2 >) | 0.080737931642829385837 |
| Genotype31967 | Pr(chi^2 >) | 0.261418555461211621349 |
| Genotype31979 | Pr(chi^2 >) | 0.164749610453284955902 |
| Genotype32358 | Pr(chi^2 >) | 0.022309346026296195120 |
| Genotype32435 | Pr(chi^2 >) | 0.307785935051542614005 |
| Genotype33066 | Pr(chi^2 >) | 0.000000039895645120858 |
| Genotype33784 | Pr(chi^2 >) | 0.961619956714765633521 |
| Genotype34443 | Pr(chi^2 >) | 0.095945126830620175440 |
| Genotype34818 | Pr(chi^2 >) | 0.584155919580792826196 |
| Genotype35584 | Pr(chi^2 >) | 0.124106335635710274268 |
| Genotype36910 | Pr(chi^2 >) | 0.541773435520464641257 |
| Genotype39107 | Pr(chi^2 >) | 0.939331366002307599494 |
| Genotype39876 | Pr(chi^2 >) | 0.043954451009552975016 |
| Genotype41521 | Pr(chi^2 >) | 0.140576624013471707109 |
| Genotype42395 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype42529 | Pr(chi^2 >) | 0.250441331945695733197 |
| Genotype42821 | Pr(chi^2 >) | 0.856774475264544199682 |
| Genotype44670 | Pr(chi^2 >) | 0.379865326120021773448 |
| Genotype45154 | Pr(chi^2 >) | 0.430075123461057029495 |
| Genotype45217 | Pr(chi^2 >) | 0.580661409600868538838 |
| Genotype51159 | Pr(chi^2 >) | 0.134879480283515151839 |
| Genotype51507 | Pr(chi^2 >) | 0.000000455268368892980 |
| Genotype53052 | Pr(chi^2 >) | 0.000969479535242734336 |
| Genotype53263 | Pr(chi^2 >) | 0.000000058186377493996 |
| Genotype53314 | Pr(chi^2 >) | 0.000043891430897335937 |
| Genotype53720 | Pr(chi^2 >) | 0.254013446690576460973 |
| Genotype53889 | Pr(chi^2 >) | 1.000000000000000000000 |
| Genotype53935 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype54240 | Pr(chi^2 >) | 0.000000000000029309888 |
| Genotype54762 | Pr(chi^2 >) | 0.606528297300154894955 |
| Genotype55111 | Pr(chi^2 >) | 0.540338104244245331920 |
| Genotype55142 | Pr(chi^2 >) | 0.001937393847067592212 |
| Genotype55564 | Pr(chi^2 >) | 0.729724778041380472970 |
| Genotype56423 | Pr(chi^2 >) | 0.012116062446438924383 |
| Genotype56785 | Pr(chi^2 >) | 0.054194174266008143803 |
| Genotype57131 | Pr(chi^2 >) | 0.888804884594226685124 |
| Genotype57989 | Pr(chi^2 >) | 0.848601897876420929734 |
| Genotype58053 | Pr(chi^2 >) | 0.000000000000000000000 |
| Genotype59503 | Pr(chi^2 >) | 0.332692002046469648135 |
| Genotype59586 | Pr(chi^2 >) | 0.421852074177645364195 |
| Genotype59967 | Pr(chi^2 >) | 0.158288229411202907571 |
| Genotype60546 | Pr(chi^2 >) | 0.234730781833655144375 |
| Genotype63140 | Pr(chi^2 >) | 0.301490533539836569332 |
| Genotype63267 | Pr(chi^2 >) | 0.310941712357475141815 |
| Genotype63581 | Pr(chi^2 >) | 0.514209979726409471823 |
| Genotype63605 | Pr(chi^2 >) | 0.466957982788056114032 |
| Genotype63771 | Pr(chi^2 >) | 0.000000000000041300297 |
| Genotype63798 | Pr(chi^2 >) | 0.118910618306597215543 |
| Genotype65064 | Pr(chi^2 >) | 0.000000769117490362348 |
| Genotype65576 | Pr(chi^2 >) | 0.000189846211421484945 |

## F Statistic

| **Var1** | **Var2** | **value** |
| --- | --- | --- |
| Genotype3441 | Fit | 0.0148273364 |
| Genotype4173 | Fit | 0.0436551154 |
| Genotype6157 | Fit | 0.0613283025 |
| Genotype7502 | Fit | 0.0781972671 |
| Genotype7892 | Fit | 0.0487337595 |
| Genotype8953 | Fit | -0.5530808902 |
| Genotype9441 | Fit | -0.0057341204 |
| Genotype11071 | Fit | 0.0549327226 |
| Genotype11183 | Fit | 0.0359987081 |
| Genotype11291 | Fit | 0.2801010921 |
| Genotype12971 | Fit | -0.0816244858 |
| Genotype14047 | Fit | 0.0354492131 |
| Genotype14742 | Fit | 0.1203914425 |
| Genotype15109 | Fit | 0.0020672007 |
| Genotype15128 | Fit | 0.0738798047 |
| Genotype15435 | Fit | 0.0341298060 |
| Genotype15531 | Fit | -0.0808812303 |
| Genotype15581 | Fit | 0.2711756471 |
| Genotype18512 | Fit | 0.0152134332 |
| Genotype18652 | Fit | -0.0112392211 |
| Genotype19266 | Fit | 0.0210114055 |
| Genotype19460 | Fit | -0.0267236440 |
| Genotype20354 | Fit | 0.0871224274 |
| Genotype21197 | Fit | 0.9442288054 |
| Genotype21880 | Fit | -0.2239681588 |
| Genotype22323 | Fit | -0.4829703521 |
| Genotype22365 | Fit | -0.3128012625 |
| Genotype22740 | Fit | 0.1547511111 |
| Genotype23146 | Fit | -0.0165060941 |
| Genotype23447 | Fit | -0.0144373762 |
| Genotype23481 | Fit | 0.0014266662 |
| Genotype23677 | Fit | 0.0890392012 |
| Genotype23787 | Fit | 0.0098832645 |
| Genotype24020 | Fit | -0.0053785331 |
| Genotype25229 | Fit | -0.0042747347 |
| Genotype25608 | Fit | -0.0285641726 |
| Genotype27329 | Fit | 0.0560762176 |
| Genotype28357 | Fit | 0.0443936713 |
| Genotype29410 | Fit | 0.0052158933 |
| Genotype29801 | Fit | 0.0298028133 |
| Genotype29889 | Fit | 0.1132417389 |
| Genotype30339 | Fit | 0.0140420187 |
| Genotype31462 | Fit | 0.2402454980 |
| Genotype31618 | Fit | -0.0477816958 |
| Genotype31967 | Fit | -0.0306155776 |
| Genotype31979 | Fit | 0.0400104977 |
| Genotype32358 | Fit | 0.0676526004 |
| Genotype32435 | Fit | 0.0297818999 |
| Genotype33066 | Fit | 0.1568770731 |
| Genotype33784 | Fit | -0.0007251976 |
| Genotype34443 | Fit | 0.0470521312 |
| Genotype34818 | Fit | 0.0159923999 |
| Genotype35584 | Fit | 0.0434831137 |
| Genotype36910 | Fit | -0.0159992394 |
| Genotype39107 | Fit | 0.0030392302 |
| Genotype39876 | Fit | 0.0583192148 |
| Genotype41521 | Fit | -0.0635085223 |
| Genotype42395 | Fit | 0.2799219544 |
| Genotype42529 | Fit | 0.0327697645 |
| Genotype42821 | Fit | 0.0056466095 |
| Genotype44670 | Fit | 0.0252829453 |
| Genotype45154 | Fit | 0.0226598667 |
| Genotype45217 | Fit | 0.0157910415 |
| Genotype51159 | Fit | -0.0408628217 |
| Genotype51507 | Fit | 0.1450991556 |
| Genotype53052 | Fit | 0.0952580234 |
| Genotype53263 | Fit | 0.1546571020 |
| Genotype53314 | Fit | 0.1162027446 |
| Genotype53720 | Fit | 0.0322972744 |
| Genotype53889 | Fit |  |
| Genotype53935 | Fit | 0.4952067696 |
| Genotype54240 | Fit | -0.2173772462 |
| Genotype54762 | Fit | 0.0149174633 |
| Genotype55111 | Fit | 0.0183799478 |
| Genotype55142 | Fit | 0.0868060406 |
| Genotype55564 | Fit | 0.0103288435 |
| Genotype56423 | Fit | 0.0706408885 |
| Genotype56785 | Fit | 0.0545166824 |
| Genotype57131 | Fit | -0.0035721996 |
| Genotype57989 | Fit | -0.0044610496 |
| Genotype58053 | Fit | 0.6086933981 |
| Genotype59503 | Fit | 0.0278905445 |
| Genotype59586 | Fit | -0.0215383718 |
| Genotype59967 | Fit | -0.0408121138 |
| Genotype60546 | Fit | 0.0333441710 |
| Genotype63140 | Fit | 0.0298175103 |
| Genotype63267 | Fit | 0.0285731205 |
| Genotype63581 | Fit | -0.0173303114 |
| Genotype63605 | Fit | -0.0193916805 |
| Genotype63771 | Fit | 0.2111648239 |
| Genotype63798 | Fit | 0.0440041375 |
| Genotype65064 | Fit | 0.1414413810 |
| Genotype65576 | Fit | 0.1068889146 |
| Genotype3441 | Fst | 0.0054114576 |
| Genotype4173 | Fst | 0.0070670508 |
| Genotype6157 | Fst | 0.0860866622 |
| Genotype7502 | Fst | 0.0505804618 |
| Genotype7892 | Fst | 0.0023616230 |
| Genotype8953 | Fst | 0.0512933371 |
| Genotype9441 | Fst | 0.0002792806 |
| Genotype11071 | Fst | 0.0048396309 |
| Genotype11183 | Fst | 0.0210916277 |
| Genotype11291 | Fst | 0.2939037073 |
| Genotype12971 | Fst | 0.0091591041 |
| Genotype14047 | Fst | 0.0330208819 |
| Genotype14742 | Fst | 0.0104241796 |
| Genotype15109 | Fst | -0.0026079842 |
| Genotype15128 | Fst | 0.0862994526 |
| Genotype15435 | Fst | 0.0412667828 |
| Genotype15531 | Fst | 0.2265009023 |
| Genotype15581 | Fst | 0.2700522300 |
| Genotype18512 | Fst | 0.0241892743 |
| Genotype18652 | Fst | 0.0095150318 |
| Genotype19266 | Fst | 0.0025646856 |
| Genotype19460 | Fst | 0.0091893789 |
| Genotype20354 | Fst | 0.0089195907 |
| Genotype21197 | Fst | 0.0620714931 |
| Genotype21880 | Fst | 0.0288336890 |
| Genotype22323 | Fst | 0.0064551766 |
| Genotype22365 | Fst | 0.0415563284 |
| Genotype22740 | Fst | 0.1842368030 |
| Genotype23146 | Fst | 0.0078639699 |
| Genotype23447 | Fst | 0.0102666510 |
| Genotype23481 | Fst | 0.0300180599 |
| Genotype23677 | Fst | 0.0021409984 |
| Genotype23787 | Fst | 0.0107960319 |
| Genotype24020 | Fst | 0.0474080482 |
| Genotype25229 | Fst | 0.0321036664 |
| Genotype25608 | Fst | 0.0157658898 |
| Genotype27329 | Fst | 0.0048238969 |
| Genotype28357 | Fst | 0.0188080962 |
| Genotype29410 | Fst | 0.0129616691 |
| Genotype29801 | Fst | 0.0272967445 |
| Genotype29889 | Fst | 0.1310197731 |
| Genotype30339 | Fst | 0.0161465812 |
| Genotype31462 | Fst | 0.2452366368 |
| Genotype31618 | Fst | 0.0066019459 |
| Genotype31967 | Fst | 0.0055005012 |
| Genotype31979 | Fst | 0.0220858391 |
| Genotype32358 | Fst | 0.1455431337 |
| Genotype32435 | Fst | 0.0322542045 |
| Genotype33066 | Fst | 0.1851578837 |
| Genotype33784 | Fst | 0.0086852698 |
| Genotype34443 | Fst | 0.0147860311 |
| Genotype34818 | Fst | 0.0156992842 |
| Genotype35584 | Fst | 0.0207144890 |
| Genotype36910 | Fst | 0.0226359264 |
| Genotype39107 | Fst | 0.0209495676 |
| Genotype39876 | Fst | 0.0677036063 |
| Genotype41521 | Fst | 0.1800349880 |
| Genotype42395 | Fst | 0.2853774713 |
| Genotype42529 | Fst | 0.0202415131 |
| Genotype42821 | Fst | 0.0097278650 |
| Genotype44670 | Fst | 0.0171856345 |
| Genotype45154 | Fst | 0.0157011452 |
| Genotype45217 | Fst | 0.0030779247 |
| Genotype51159 | Fst | 0.0180705233 |
| Genotype51507 | Fst | 0.1910741546 |
| Genotype53052 | Fst | 0.1427816533 |
| Genotype53263 | Fst | 0.1763424181 |
| Genotype53314 | Fst | 0.1140308716 |
| Genotype53720 | Fst | 0.0094950512 |
| Genotype53889 | Fst |  |
| Genotype53935 | Fst | 0.4854864641 |
| Genotype54240 | Fst | 0.0124106833 |
| Genotype54762 | Fst | 0.0089990890 |
| Genotype55111 | Fst | 0.0334683776 |
| Genotype55142 | Fst | 0.0149149688 |
| Genotype55564 | Fst | 0.0129447006 |
| Genotype56423 | Fst | 0.0223879817 |
| Genotype56785 | Fst | 0.0290140217 |
| Genotype57131 | Fst | -0.0020565753 |
| Genotype57989 | Fst | 0.0180948797 |
| Genotype58053 | Fst | 0.6311193718 |
| Genotype59503 | Fst | 0.0235664696 |
| Genotype59586 | Fst | 0.0196136312 |
| Genotype59967 | Fst | 0.0064412267 |
| Genotype60546 | Fst | -0.0014149744 |
| Genotype63140 | Fst | 0.0270972237 |
| Genotype63267 | Fst | 0.0016509242 |
| Genotype63581 | Fst | 0.0187450135 |
| Genotype63605 | Fst | 0.0153249317 |
| Genotype63771 | Fst | 0.0392085038 |
| Genotype63798 | Fst | 0.0073792071 |
| Genotype65064 | Fst | 0.1838946394 |
| Genotype65576 | Fst | 0.1251375111 |
| Genotype3441 | Fis | 0.0094671096 |
| Genotype4173 | Fis | 0.0368484746 |
| Genotype6157 | Fis | -0.0270904895 |
| Genotype7502 | Fis | 0.0290880945 |
| Genotype7892 | Fis | 0.0464819093 |
| Genotype8953 | Fis | -0.6370506827 |
| Genotype9441 | Fis | -0.0060150809 |
| Genotype11071 | Fis | 0.0503367028 |
| Genotype11183 | Fis | 0.0152282694 |
| Genotype11291 | Fis | -0.0195477804 |
| Genotype12971 | Fis | -0.0916227724 |
| Genotype14047 | Fis | 0.0025112551 |
| Genotype14742 | Fis | 0.1111256567 |
| Genotype15109 | Fis | 0.0046630238 |
| Genotype15128 | Fis | -0.0135926896 |
| Genotype15435 | Fis | -0.0074441739 |
| Genotype15531 | Fis | -0.3973917144 |
| Genotype15581 | Fis | 0.0015390376 |
| Genotype18512 | Fis | -0.0091983424 |
| Genotype18652 | Fis | -0.0209536274 |
| Genotype19266 | Fis | 0.0184941516 |
| Genotype19460 | Fis | -0.0362461020 |
| Genotype20354 | Fis | 0.0789066518 |
| Genotype21197 | Fis | 0.9405379044 |
| Genotype21880 | Fis | -0.2603074725 |
| Genotype22323 | Fis | -0.4926053835 |
| Genotype22365 | Fis | -0.3697218745 |
| Genotype22740 | Fis | -0.0361449156 |
| Genotype23146 | Fis | -0.0245632285 |
| Genotype23447 | Fis | -0.0249602858 |
| Genotype23481 | Fis | -0.0294762125 |
| Genotype23677 | Fis | 0.0870846509 |
| Genotype23787 | Fis | -0.0009227292 |
| Genotype24020 | Fis | -0.0554136336 |
| Genotype25229 | Fis | -0.0375850180 |
| Genotype25608 | Fis | -0.0450401606 |
| Genotype27329 | Fis | 0.0515007550 |
| Genotype28357 | Fis | 0.0260760153 |
| Genotype29410 | Fis | -0.0078474924 |
| Genotype29801 | Fis | 0.0025763961 |
| Genotype29889 | Fis | -0.0204585026 |
| Genotype30339 | Fis | -0.0021391017 |
| Genotype31462 | Fis | -0.0066128526 |
| Genotype31618 | Fis | -0.0547450656 |
| Genotype31967 | Fis | -0.0363158341 |
| Genotype31979 | Fis | 0.0183294806 |
| Genotype32358 | Fis | -0.0911579466 |
| Genotype32435 | Fis | -0.0025547046 |
| Genotype33066 | Fis | -0.0347071046 |
| Genotype33784 | Fis | -0.0094929160 |
| Genotype34443 | Fis | 0.0327503477 |
| Genotype34818 | Fis | 0.0002977908 |
| Genotype35584 | Fis | 0.0232502416 |
| Genotype36910 | Fis | -0.0395299631 |
| Genotype39107 | Fis | -0.0182935799 |
| Genotype39876 | Fis | -0.0100658885 |
| Genotype41521 | Fis | -0.2970169541 |
| Genotype42395 | Fis | -0.0076341240 |
| Genotype42529 | Fis | 0.0127870812 |
| Genotype42821 | Fis | -0.0041213474 |
| Genotype44670 | Fis | 0.0082389016 |
| Genotype45154 | Fis | 0.0070697242 |
| Genotype45217 | Fis | 0.0127523677 |
| Genotype51159 | Fis | -0.0600178998 |
| Genotype51507 | Fis | -0.0568346273 |
| Genotype53052 | Fis | -0.0554393523 |
| Genotype53263 | Fis | -0.0263280719 |
| Genotype53314 | Fis | 0.0024514094 |
| Genotype53720 | Fis | 0.0230208069 |
| Genotype53889 | Fis |  |
| Genotype53935 | Fis | 0.0188922251 |
| Genotype54240 | Fis | -0.2326755926 |
| Genotype54762 | Fis | 0.0059721179 |
| Genotype55111 | Fis | -0.0156109013 |
| Genotype55142 | Fis | 0.0729795597 |
| Genotype55564 | Fis | -0.0026501626 |
| Genotype56423 | Fis | 0.0493579313 |
| Genotype56785 | Fis | 0.0262647055 |
| Genotype57131 | Fis | -0.0015125136 |
| Genotype57989 | Fis | -0.0229715976 |
| Genotype58053 | Fis | -0.0607946635 |
| Genotype59503 | Fis | 0.0044284375 |
| Genotype59586 | Fis | -0.0419752909 |
| Genotype59967 | Fis | -0.0475596832 |
| Genotype60546 | Fis | 0.0347100316 |
| Genotype63140 | Fis | 0.0027960519 |
| Genotype63267 | Fis | 0.0269667163 |
| Genotype63581 | Fis | -0.0367644755 |
| Genotype63605 | Fis | -0.0352569221 |
| Genotype63771 | Fis | 0.1789736075 |
| Genotype63798 | Fis | 0.0368972026 |
| Genotype65064 | Fis | -0.0520193353 |
| Genotype65576 | Fis | -0.0208588170 |

## Expected heterozygosity (Hs)

| **Var1** | **Var2** | **value** |
| --- | --- | --- |
| Ale | 1 | 0.3485924 |
| Ber | 1 | 0.3457923 |
| Brd | 1 | 0.3655890 |
| Cor | 1 | 0.3960457 |
| Cro | 1 | 0.3633813 |
| Eye | 1 | 0.3731663 |
| Flo | 1 | 0.3340000 |
| Gul | 1 | 0.3510571 |
| Heb | 1 | 0.3834641 |
| Hel | 1 | 0.3359330 |
| Hoo | 1 | 0.3856130 |
| Idr16 | 1 | 0.3886837 |
| Idr17 | 1 | 0.3936641 |
| Iom | 1 | 0.3881957 |
| Ios | 1 | 0.3921272 |
| Jer | 1 | 0.3775674 |
| Kav | 1 | 0.3520370 |
| Kil | 1 | 0.3826707 |
| Laz | 1 | 0.3495044 |
| Loo | 1 | 0.3816783 |
| Lyn | 1 | 0.3906956 |
| Lys | 1 | 0.3416739 |
| Mul | 1 | 0.3906946 |
| Oos | 1 | 0.3223511 |
| Ork | 1 | 0.3670565 |
| Pad | 1 | 0.3734870 |
| Pem | 1 | 0.3783674 |
| Sar13 | 1 | 0.3168522 |
| Sar17 | 1 | 0.3527043 |
| Sbs | 1 | 0.3691098 |
| She | 1 | 0.3720717 |
| Sin | 1 | 0.3424848 |
| Sky | 1 | 0.3463826 |
| Sul | 1 | 0.3712261 |
| Tar | 1 | 0.3537934 |
| The | 1 | 0.3492043 |
| Tor | 1 | 0.3384891 |
| Tro | 1 | 0.3553571 |
| Ven | 1 | 0.3810217 |
| Vig | 1 | 0.3985359 |