

# WES PRECONCEPTION TEST \* DG 2.15

| <i>Gene</i> | <i>Median coverage</i> | <i>% covered &gt;10x</i> | <i>% covered &gt;20x</i> | <i>OMIM disease ID</i> |
|-------------|------------------------|--------------------------|--------------------------|------------------------|
| AAAS        | 106.4                  | 100.0                    | 99.7                     | 231550                 |
| AARS        | 124.3                  | 100.0                    | 99.6                     | 616339                 |
| AARS2       | 126.2                  | 100.0                    | 99.3                     | 614096                 |
| ABAT        | 92.7                   | 100.0                    | 99.5                     | 613163                 |
| ABCA1       | 123.6                  | 100.0                    | 99.5                     | 604091                 |
| ABCA12      | 140.0                  | 99.6                     | 97.8                     | 242500                 |
| ABCA3       | 124.0                  | 99.9                     | 99.3                     | 610921                 |
| ABCA4       | 127.1                  | 100.0                    | 99.5                     | 604116                 |
| ABCB11      | 158.2                  | 99.9                     | 99.1                     | 605479                 |
| ABCB4       | 129.8                  | 99.9                     | 97.9                     | 614972                 |
| ABCC2       | 135.8                  | 100.0                    | 100.0                    | 237500                 |
| ABCC6       | 116.4                  | 93.6                     | 92.6                     | 614473                 |
| ABCC8       | 146.6                  | 100.0                    | 99.9                     | 125853                 |
| ABCD3       | 93.7                   | 95.2                     | 89.5                     | 616278                 |
| ABCD4       | 143.6                  | 99.9                     | 98.3                     | 614857                 |
| ABCG5       | 145.2                  | 100.0                    | 99.2                     | 210250                 |
| ABCG8       | 148.4                  | 99.2                     | 96.6                     | 611465                 |
| ABHD12      | 107.0                  | 97.3                     | 88.0                     | 612674                 |
| ABHD5       | 209.6                  | 100.0                    | 99.9                     | 275630                 |
| ACAD8       | 141.5                  | 100.0                    | 100.0                    | 611283                 |
| ACAD9       | 135.2                  | 98.4                     | 95.7                     | 611126                 |
| ACADM       | 101.3                  | 98.8                     | 95.6                     | 201450                 |
| ACADS       | 123.9                  | 99.3                     | 97.6                     | 201470                 |
| ACADSB      | 119.1                  | 99.5                     | 95.6                     | 610006                 |
| ACADVL      | 118.8                  | 98.7                     | 95.1                     | 201475                 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| ACAN     | 121.6 | 91.6  | 85.0  | 165800 |
| ACAT1    | 123.7 | 99.2  | 94.6  | 203750 |
| ACE      | 120.7 | 99.5  | 97.4  | 267430 |
| ACER3    | 105.8 | 99.9  | 97.5  | 617762 |
| ACO2     | 129.3 | 95.8  | 91.8  | 614559 |
| ACOX1    | 155.3 | 100.0 | 100.0 | 264470 |
| ACP5     | 196.2 | 100.0 | 99.9  | 607944 |
| ACSF3    | 128.8 | 99.9  | 99.3  | 614265 |
| ACTA1    | 99.7  | 99.2  | 95.3  | 161800 |
| ACY1     | 132.8 | 99.9  | 98.3  | 609924 |
| ADA      | 113.0 | 98.9  | 97.3  | 102700 |
| ADA2     | 101.4 | 99.9  | 99.1  | 615688 |
| ADAM22   | 140.5 | 99.9  | 98.6  | 617933 |
| ADAM9    | 146.3 | 98.6  | 94.1  | 612775 |
| ADAMTS10 | 107.8 | 99.9  | 98.7  | 277600 |
| ADAMTS13 | 99.9  | 96.3  | 91.7  | 274150 |
| ADAMTS17 | 117.1 | 88.9  | 86.7  | 613195 |
| ADAMTS18 | 147.5 | 99.9  | 98.9  | 608454 |
| ADAMTS2  | 117.4 | 98.5  | 96.6  | 225410 |
| ADAMTSL2 | 112.2 | 96.5  | 91.0  | 231050 |
| ADAMTSL4 | 90.6  | 99.9  | 98.8  | 225100 |
| ADAR     | 125.0 | 100.0 | 99.8  | 615010 |
| ADAT3    | 82.1  | 99.5  | 97.3  | 615286 |
| ADD3     | 169.7 | 100.0 | 99.7  | 617008 |
| ADGRG1   | 149.7 | 100.0 | 100.0 | 606854 |
| ADGRG6   | 147.6 | 99.8  | 98.0  | 616503 |
| ADGRV1   | 140.3 | 99.5  | 97.0  | 605472 |
| ADK      | 100.4 | 99.5  | 96.1  | 614300 |
| ADSL     | 183.6 | 99.2  | 99.1  | 103050 |
| ADSSL1   | 113.6 | 89.8  | 85.9  | 617030 |

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|----------|-------|-------|-------|--------|
| AFG3L2   | 121.0 | 91.9  | 84.9  | 614487 |
| AGA      | 130.2 | 100.0 | 100.0 | 208400 |
| AGBL5    | 111.0 | 100.0 | 99.8  | 617023 |
| AGK      | 112.1 | 99.3  | 96.4  | 614691 |
| AGL      | 146.7 | 99.7  | 98.0  | 232400 |
| AGPAT2   | 109.5 | 99.0  | 95.1  | 608594 |
| AGPS     | 51.7  | 96.8  | 84.8  | 600121 |
| AGRN     | 114.8 | 95.2  | 89.3  | 254300 |
| AGT      | 214.2 | 100.0 | 100.0 | 267430 |
| AGTR1    | 134.6 | 92.0  | 91.9  | 145500 |
| AGXT     | 139.5 | 99.9  | 99.2  | 259900 |
| AHCY     | 124.5 | 100.0 | 99.8  | 613752 |
| AHI1     | 139.3 | 99.2  | 95.1  | 608629 |
| AICDA    | 139.0 | 89.8  | 82.6  | 605258 |
| AIMP1    | 84.8  | 97.3  | 89.7  | 260600 |
| AIPL1    | 116.0 | 100.0 | 99.5  | 604393 |
| AIRE     | 68.2  | 98.9  | 92.0  | 240300 |
| AK1      | 119.8 | 100.0 | 99.2  | 612631 |
| AK2      | 111.8 | 99.8  | 96.6  | 267500 |
| AKR1C2   | 179.5 | 96.3  | 89.6  | 614279 |
| AKR1D1   | 106.1 | 98.5  | 94.3  | 235555 |
| ALAD     | 100.6 | 99.8  | 97.4  | 612740 |
| ALB      | 156.0 | 99.9  | 98.7  | 616000 |
| ALDH18A1 | 131.1 | 100.0 | 99.9  | 219150 |
| ALDH1A3  | 104.7 | 93.4  | 89.6  | 615113 |
| ALDH3A2  | 125.7 | 95.3  | 94.6  | 270200 |
| ALDH4A1  | 116.0 | 100.0 | 98.6  | 239510 |
| ALDH5A1  | 87.6  | 86.4  | 80.1  | 271980 |
| ALDH6A1  | 127.3 | 100.0 | 100.0 | 614105 |
| ALDH7A1  | 77.1  | 93.7  | 85.4  | 266100 |

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|---------|-------|-------|-------|--------|
| ALDOA   | 139.1 | 76.3  | 74.7  | 611881 |
| ALDOB   | 165.7 | 100.0 | 99.4  | 229600 |
| ALG1    | 50.9  | 53.6  | 48.8  | 608540 |
| ALG11   | 139.6 | 96.7  | 96.0  | 613661 |
| ALG12   | 156.2 | 100.0 | 100.0 | 607143 |
| ALG2    | 115.9 | 100.0 | 100.0 | 607906 |
| ALG3    | 132.9 | 100.0 | 100.0 | 601110 |
| ALG6    | 96.4  | 96.0  | 93.3  | 603147 |
| ALG8    | 126.0 | 96.5  | 95.1  | 608104 |
| ALG9    | 124.3 | 100.0 | 99.6  | 608776 |
| ALMS1   | 179.8 | 99.9  | 99.7  | 203800 |
| ALOX12B | 130.6 | 100.0 | 99.5  | 242100 |
| ALOXE3  | 122.2 | 100.0 | 100.0 | 606545 |
| ALPL    | 156.4 | 100.0 | 100.0 | 146300 |
| ALS2    | 170.2 | 99.9  | 99.2  | 205100 |
| ALX1    | 153.2 | 99.9  | 98.4  | 613456 |
| ALX3    | 102.7 | 73.3  | 70.9  | 136760 |
| ALX4    | 132.7 | 98.4  | 92.5  | 613451 |
| AMACR   | 157.9 | 100.0 | 100.0 | 614307 |
| AMBN    | 175.1 | 94.6  | 88.5  | 616270 |
| AMN     | 66.8  | 83.5  | 71.6  | 261100 |
| AMPD1   | 126.7 | 100.0 | 99.9  | 615511 |
| AMPD2   | 135.5 | 99.9  | 99.2  | 615809 |
| AMT     | 173.1 | 100.0 | 100.0 | 605899 |
| ANGPTL3 | 89.9  | 97.5  | 92.2  | 605019 |
| ANK3    | 155.1 | 99.1  | 98.8  | 615493 |
| ANKH    | 118.6 | 100.0 | 99.7  | 1      |
| ANKLE2  | 162.5 | 98.0  | 94.7  | 616681 |
| ANKS6   | 91.8  | 92.8  | 88.6  | 615382 |
| ANO10   | 116.7 | 98.8  | 96.5  | 613728 |

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|----------|-------|-------|-------|--------|
| ANO5     | 142.2 | 99.5  | 95.9  | 611307 |
| ANO6     | 137.4 | 98.0  | 92.9  | 262890 |
| ANTXR1   | 123.0 | 98.3  | 95.7  | 230740 |
| ANTXR2   | 100.0 | 98.9  | 94.9  | 228600 |
| AP1S1    | 111.3 | 99.9  | 99.5  | 609313 |
| AP3B1    | 95.0  | 97.8  | 90.2  | 608233 |
| AP3B2    | 135.1 | 97.5  | 94.2  | 617276 |
| AP3D1    | 121.0 | 98.1  | 97.8  | 617050 |
| AP4B1    | 147.4 | 100.0 | 99.8  | 614066 |
| AP4E1    | 98.7  | 99.7  | 97.9  | 613744 |
| AP4M1    | 127.2 | 99.1  | 96.4  | 612936 |
| AP4S1    | 65.8  | 71.8  | 69.3  | 614067 |
| AP5Z1    | 96.8  | 99.7  | 96.6  | 613647 |
| APC2     | 63.5  | 93.3  | 85.3  | 617169 |
| APOB     | 181.7 | 99.6  | 99.3  | 615558 |
| APOC2    | 99.4  | 100.0 | 100.0 | 207750 |
| APOE     | 56.2  | 93.9  | 83.1  | 269600 |
| APOPT1   | 63.8  | 81.4  | 78.1  | 220110 |
| APRT     | 68.2  | 100.0 | 98.7  | 614723 |
| APTX     | 118.9 | 94.2  | 91.1  | 208920 |
| AQP2     | 117.4 | 99.5  | 95.6  | 125800 |
| ARFGEF2  | 154.9 | 100.0 | 99.3  | 608097 |
| ARG1     | 167.8 | 100.0 | 100.0 | 207800 |
| ARHGDI A | 143.9 | 100.0 | 99.9  | 615244 |
| ARL13B   | 97.3  | 98.9  | 92.8  | 612291 |
| ARL2BP   | 66.3  | 88.3  | 79.3  | 615434 |
| ARL6     | 85.2  | 99.8  | 95.3  | 600151 |
| ARMC4    | 129.1 | 94.4  | 93.4  | 615451 |
| ARSA     | 97.8  | 100.0 | 99.7  | 250100 |
| ARSB     | 117.5 | 94.9  | 87.7  | 253200 |

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|----------|-------|-------|-------|--------|
| ARV1     | 133.5 | 100.0 | 99.3  | 617020 |
| ASAH1    | 105.9 | 97.6  | 92.1  | 228000 |
| ASL      | 114.4 | 99.9  | 98.8  | 207900 |
| ASNS     | 105.8 | 97.8  | 90.5  | 615574 |
| ASPA     | 127.6 | 99.1  | 95.8  | 271900 |
| ASPH     | 117.3 | 98.8  | 93.9  | 601552 |
| ASPM     | 101.2 | 98.0  | 92.2  | 608716 |
| ASS1     | 97.9  | 95.7  | 87.5  | 215700 |
| ATCAY    | 146.1 | 100.0 | 99.7  | 601238 |
| ATF6     | 134.1 | 100.0 | 99.6  | 616517 |
| ATIC     | 119.5 | 99.7  | 99.0  | 608688 |
| ATM      | 109.7 | 99.0  | 94.0  | 208900 |
| ATOH7    | 102.8 | 95.8  | 89.6  | 221900 |
| ATP13A2  | 117.4 | 100.0 | 98.8  | 606693 |
| ATP2A1   | 155.9 | 100.0 | 100.0 | 601003 |
| ATP6V0A2 | 130.0 | 100.0 | 99.3  | 219200 |
| ATP6V0A4 | 116.4 | 99.9  | 98.6  | 602722 |
| ATP6V1B1 | 176.6 | 100.0 | 100.0 | 267300 |
| ATP7B    | 168.9 | 100.0 | 99.8  | 277900 |
| ATP8A2   | 133.5 | 100.0 | 99.5  | 615268 |
| ATP8B1   | 139.0 | 96.7  | 94.4  | 243300 |
| ATPAF2   | 101.4 | 100.0 | 100.0 | 604273 |
| ATR      | 138.3 | 99.4  | 96.9  | 210600 |
| AUH      | 90.9  | 99.9  | 97.6  | 250950 |
| AURKC    | 79.0  | 99.8  | 97.5  | 243060 |
| B2M      | 252.1 | 100.0 | 99.9  | 241600 |
| B3GALNT2 | 115.0 | 92.4  | 89.7  | 615181 |
| B3GALT6  | 47.5  | 76.4  | 71.7  | 615349 |
| B3GAT3   | 93.6  | 99.4  | 95.9  | 245600 |
| B3GLCT   | 101.2 | 97.4  | 93.4  | 261540 |

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|----------|-------|-------|-------|--------|
| B4GALNT1 | 151.0 | 95.6  | 90.1  | 609195 |
| B4GALT1  | 105.4 | 99.9  | 99.0  | 607091 |
| B4GALT7  | 104.3 | 96.1  | 95.0  | 130070 |
| B4GAT1   | 120.4 | 100.0 | 100.0 | 615287 |
| B9D2     | 110.9 | 100.0 | 100.0 | 614175 |
| BAAT     | 121.4 | 98.3  | 95.3  | 607748 |
| BANF1    | 58.3  | 98.0  | 88.1  | 614008 |
| BBS1     | 148.9 | 100.0 | 100.0 | 209900 |
| BBS10    | 172.6 | 100.0 | 100.0 | 209900 |
| BBS12    | 208.6 | 100.0 | 100.0 | 209900 |
| BBS2     | 181.8 | 100.0 | 99.8  | 209900 |
| BBS4     | 135.9 | 99.7  | 97.3  | 209900 |
| BBS5     | 81.1  | 95.8  | 84.1  | 209900 |
| BBS7     | 120.7 | 98.1  | 91.7  | 209900 |
| BBS9     | 112.9 | 96.0  | 93.8  | 209900 |
| BCKDHA   | 171.5 | 100.0 | 99.5  | 248600 |
| BCKDHB   | 112.6 | 88.9  | 81.3  | 248600 |
| BCKDK    | 178.8 | 100.0 | 100.0 | 614923 |
| BCS1L    | 182.3 | 100.0 | 100.0 | 262000 |
| BFSP1    | 98.0  | 98.2  | 88.9  | 611391 |
| BFSP2    | 89.5  | 99.8  | 97.6  | 611597 |
| BHLHA9   | 13.8  | 57.8  | 41.3  | 609432 |
| BIN1     | 100.2 | 99.1  | 95.3  | 255200 |
| BLM      | 116.3 | 99.4  | 96.5  | 210900 |
| BLNK     | 95.7  | 93.7  | 91.3  | 613502 |
| BLOC1S3  | 28.7  | 88.7  | 65.3  | 614077 |
| BLOC1S6  | 97.2  | 98.7  | 91.3  | 614171 |
| BLVRA    | 125.1 | 100.0 | 99.7  | 614156 |
| BMP1     | 143.9 | 99.9  | 99.1  | 614856 |
| BMPER    | 159.9 | 99.9  | 99.0  | 608022 |

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|----------|-------|-------|-------|--------|
| BMPR1B   | 172.4 | 100.0 | 98.9  | 112600 |
| BOLA3    | 50.1  | 92.3  | 81.7  | 614299 |
| BPGM     | 130.8 | 100.0 | 100.0 | 222800 |
| BRAT1    | 108.5 | 99.8  | 97.4  | 614498 |
| BRF1     | 100.0 | 96.6  | 92.9  | 616202 |
| BSCL2    | 113.5 | 100.0 | 100.0 | 269700 |
| BSND     | 137.1 | 100.0 | 100.0 | 602522 |
| BTD      | 166.6 | 100.0 | 99.9  | 253260 |
| BUB1B    | 136.5 | 98.6  | 97.9  | 257300 |
| C12orf4  | 131.3 | 99.1  | 94.7  | 1      |
| C12orf57 | 152.0 | 100.0 | 100.0 | 218340 |
| C12orf65 | 88.2  | 97.3  | 91.9  | 613559 |
| C15orf41 | 124.9 | 99.9  | 97.9  | 615631 |
| C19orf12 | 93.9  | 100.0 | 99.7  | 614298 |
| C1QA     | 120.4 | 100.0 | 99.0  | 613652 |
| C1QB     | 183.4 | 100.0 | 99.9  | 613652 |
| C1QBP    | 80.7  | 81.7  | 71.0  | 617713 |
| C1QC     | 198.1 | 100.0 | 98.9  | 613652 |
| C1S      | 117.6 | 100.0 | 99.7  | 613783 |
| C2       | 129.9 | 100.0 | 100.0 | 217000 |
| C21orf59 | 145.8 | 98.7  | 94.6  | 615500 |
| C2CD3    | 143.1 | 95.8  | 95.6  | 615948 |
| C2orf71  | 124.6 | 99.7  | 98.8  | 613428 |
| C3       | 145.5 | 100.0 | 99.7  | 613779 |
| C4A      | 91.5  | 98.1  | 95.9  | 614380 |
| C4B      | 90.5  | 98.5  | 96.5  | 614379 |
| C4orf26  | 197.6 | 100.0 | 100.0 | 614832 |
| C5       | 134.4 | 98.4  | 95.3  | 609536 |
| C5orf42  | 122.8 | 98.6  | 95.5  | 614615 |
| C8A      | 120.2 | 100.0 | 99.8  | 613790 |



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|----------|-------|-------|-------|--------|
| C8B      | 135.8 | 99.9  | 99.5  | 613789 |
| C8orf37  | 126.4 | 100.0 | 99.0  | 614500 |
| C9       | 133.7 | 100.0 | 98.5  | 613825 |
| CA12     | 109.6 | 100.0 | 100.0 | 143860 |
| CA2      | 140.7 | 100.0 | 99.3  | 259730 |
| CA5A     | 124.1 | 99.5  | 94.9  | 615751 |
| CA8      | 114.6 | 96.8  | 93.0  | 613227 |
| CABP2    | 67.1  | 74.6  | 65.5  | 614899 |
| CABP4    | 98.4  | 99.7  | 97.7  | 610427 |
| CACNA2D4 | 112.0 | 99.2  | 97.7  | 610478 |
| CAD      | 158.9 | 100.0 | 99.7  | 616457 |
| CANT1    | 142.1 | 100.0 | 99.8  | 251450 |
| CAPN1    | 146.0 | 100.0 | 100.0 | 616907 |
| CAPN10   | 95.9  | 99.9  | 98.0  | 1      |
| CAPN3    | 111.4 | 99.0  | 96.7  | 253600 |
| CARD11   | 154.6 | 99.9  | 98.6  | 615206 |
| CARD9    | 119.7 | 98.3  | 96.4  | 212050 |
| CARS2    | 121.1 | 100.0 | 99.8  | 616672 |
| CASP8    | 144.8 | 95.6  | 95.5  | 607271 |
| CASQ2    | 143.3 | 99.9  | 99.2  | 611938 |
| CASR     | 178.0 | 100.0 | 99.7  | 239200 |
| CAST     | 110.2 | 96.8  | 92.8  | 616295 |
| CAT      | 148.5 | 100.0 | 100.0 | 614097 |
| CATSPER1 | 147.2 | 100.0 | 99.4  | 612997 |
| CAV1     | 265.4 | 100.0 | 100.0 | 612526 |
| CAVIN1   | 137.0 | 99.9  | 99.3  | 613327 |
| CBS      | 116.2 | 97.1  | 91.1  | 236200 |
| CBX2     | 96.6  | 99.9  | 98.4  | 613080 |
| CC2D1A   | 119.4 | 99.8  | 98.3  | 608443 |
| CC2D2A   | 127.4 | 99.5  | 97.1  | 216360 |

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|---------|-------|-------|-------|--------|
| CCBE1   | 75.9  | 98.9  | 95.5  | 235510 |
| CCDC103 | 116.8 | 100.0 | 99.0  | 614679 |
| CCDC114 | 120.7 | 100.0 | 99.6  | 615067 |
| CCDC115 | 59.3  | 88.0  | 85.3  | 616828 |
| CCDC151 | 116.2 | 100.0 | 99.7  | 616037 |
| CCDC174 | 133.1 | 98.1  | 93.3  | 616816 |
| CCDC39  | 74.3  | 96.6  | 88.9  | 613807 |
| CCDC40  | 126.5 | 98.9  | 97.8  | 613808 |
| CCDC65  | 105.9 | 99.7  | 97.6  | 615504 |
| CCDC8   | 111.9 | 100.0 | 100.0 | 614205 |
| CCDC88A | 78.9  | 94.7  | 84.9  | 617507 |
| CCDC88C | 101.4 | 99.8  | 97.4  | 236600 |
| CCNO    | 103.1 | 99.0  | 95.6  | 615872 |
| CCT5    | 164.5 | 99.9  | 99.1  | 256840 |
| CD151   | 132.3 | 100.0 | 100.0 | 609057 |
| CD19    | 88.8  | 99.9  | 98.4  | 613493 |
| CD247   | 101.6 | 100.0 | 98.9  | 610163 |
| CD27    | 118.1 | 100.0 | 99.6  | 615122 |
| CD2AP   | 98.2  | 99.6  | 96.0  | 607832 |
| CD320   | 92.0  | 100.0 | 99.5  | 613646 |
| CD36    | 123.3 | 99.2  | 95.7  | 608404 |
| CD3D    | 193.8 | 100.0 | 100.0 | 608971 |
| CD3E    | 152.1 | 100.0 | 99.9  | 615615 |
| CD3G    | 156.8 | 100.0 | 100.0 | 615607 |
| CD40    | 165.4 | 100.0 | 99.9  | 606843 |
| CD59    | 200.9 | 93.6  | 86.5  | 612300 |
| CD79A   | 128.3 | 99.8  | 97.0  | 613501 |
| CD79B   | 210.7 | 100.0 | 100.0 | 612692 |
| CD81    | 142.6 | 99.9  | 98.1  | 613496 |
| CD8A    | 110.0 | 99.9  | 99.0  | 608957 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| CDAN1    | 97.6  | 97.6  | 95.2  | 224120 |
| CDC14A   | 161.4 | 98.3  | 93.5  | 616958 |
| CDC45    | 160.7 | 99.4  | 97.5  | 617063 |
| CDC6     | 165.4 | 99.8  | 98.3  | 613805 |
| CDCA7    | 109.2 | 100.0 | 99.3  | 616910 |
| CDH23    | 197.2 | 100.0 | 100.0 | 601386 |
| CDH3     | 159.3 | 99.5  | 97.3  | 225280 |
| CDHR1    | 154.2 | 99.2  | 98.0  | 613660 |
| CDK10    | 114.6 | 100.0 | 99.9  | 617694 |
| CDK5RAP2 | 123.9 | 99.9  | 98.7  | 604804 |
| CDSN     | 119.3 | 100.0 | 99.5  | 146520 |
| CDT1     | 99.3  | 96.8  | 93.8  | 613804 |
| CEBPE    | 71.1  | 99.3  | 95.8  | 245480 |
| CENPF    | 139.5 | 99.5  | 97.6  | 243605 |
| CENPJ    | 141.7 | 99.7  | 97.8  | 608393 |
| CEP104   | 119.9 | 99.0  | 97.9  | 616781 |
| CEP120   | 129.7 | 99.8  | 98.1  | 616300 |
| CEP135   | 79.2  | 98.1  | 89.1  | 614673 |
| CEP152   | 162.5 | 97.2  | 94.5  | 614852 |
| CEP164   | 94.2  | 99.9  | 98.0  | 614845 |
| CEP19    | 202.7 | 100.0 | 100.0 | 615703 |
| CEP290   | 66.1  | 88.4  | 76.7  | 209900 |
| CEP41    | 83.5  | 97.7  | 89.6  | 614464 |
| CEP57    | 92.6  | 99.4  | 93.3  | 614114 |
| CEP83    | 96.7  | 98.3  | 89.1  | 615862 |
| CEP89    | 125.5 | 94.7  | 91.4  | 1      |
| CERKL    | 100.4 | 98.6  | 92.8  | 608380 |
| CERS3    | 106.8 | 100.0 | 98.8  | 615023 |
| CFAP53   | 146.6 | 97.6  | 94.2  | 614779 |
| CFD      | 80.6  | 89.7  | 81.6  | 613912 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| CFH    | 183.2 | 98.7  | 95.3  | 609814 |
| CFI    | 145.5 | 96.6  | 92.8  | 610984 |
| CFL2   | 117.3 | 94.3  | 86.7  | 610687 |
| CFTR   | 124.0 | 99.1  | 96.3  | 277180 |
| CHAT   | 130.3 | 89.3  | 86.8  | 254210 |
| CHKB   | 98.5  | 100.0 | 99.0  | 602541 |
| CHMP1A | 133.7 | 100.0 | 100.0 | 614961 |
| CHRNA1 | 121.8 | 94.7  | 94.6  | 253290 |
| CHRNB1 | 131.8 | 98.8  | 96.7  | 616314 |
| CHRND  | 150.5 | 100.0 | 99.0  | 253290 |
| CHRNE  | 127.7 | 99.3  | 95.8  | 608931 |
| CHRNG  | 155.2 | 100.0 | 100.0 | 265000 |
| CHST14 | 165.6 | 95.7  | 93.3  | 601776 |
| CHST3  | 91.6  | 100.0 | 97.5  | 143095 |
| CHST6  | 334.0 | 100.0 | 100.0 | 217800 |
| CHSY1  | 138.4 | 95.9  | 93.9  | 605282 |
| CHUK   | 131.6 | 100.0 | 98.4  | 613630 |
| CIB2   | 229.9 | 99.9  | 99.6  | 609439 |
| CIITA  | 125.0 | 100.0 | 100.0 | 209920 |
| CISD2  | 127.9 | 83.4  | 83.4  | 604928 |
| CIT    | 108.6 | 99.9  | 98.2  | 617090 |
| CKAP2L | 161.3 | 98.9  | 96.6  | 272440 |
| CLCF1  | 76.2  | 98.7  | 97.7  | 610313 |
| CLCN1  | 137.4 | 100.0 | 99.5  | 255700 |
| CLCN2  | 108.6 | 100.0 | 99.4  | 615651 |
| CLCN7  | 129.7 | 99.5  | 98.2  | 611490 |
| CLCNKB | 100.7 | 98.5  | 90.5  | 607364 |
| CLDN1  | 137.6 | 100.0 | 100.0 | 607626 |
| CLDN14 | 130.6 | 100.0 | 99.9  | 614035 |
| CLDN16 | 136.3 | 100.0 | 99.9  | 248250 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| CLDN19  | 123.7 | 98.2  | 93.7  | 248190 |
| CLIP1   | 131.7 | 99.7  | 97.8  | 1      |
| CLMP    | 111.0 | 100.0 | 99.9  | 615237 |
| CLN3    | 114.9 | 92.5  | 90.7  | 204200 |
| CLN5    | 146.1 | 98.2  | 92.2  | 256731 |
| CLN6    | 131.6 | 98.9  | 95.3  | 601780 |
| CLN8    | 163.9 | 83.5  | 83.5  | 600143 |
| CLP1    | 182.4 | 100.0 | 99.8  | 615803 |
| CLPB    | 140.2 | 100.0 | 99.5  | 616271 |
| CLPP    | 115.4 | 99.8  | 96.9  | 614129 |
| CLRN1   | 157.2 | 100.0 | 99.8  | 614180 |
| CNGA1   | 127.2 | 89.4  | 84.6  | 613756 |
| CNGA3   | 167.7 | 100.0 | 99.9  | 216900 |
| CNGB1   | 102.5 | 98.4  | 94.8  | 613767 |
| CNGB3   | 101.4 | 97.7  | 93.0  | 262300 |
| CNNM2   | 188.4 | 100.0 | 99.2  | 616418 |
| CNNM4   | 190.5 | 98.7  | 97.8  | 217080 |
| CNPY3   | 87.1  | 99.8  | 96.7  | 617929 |
| CNTN1   | 151.7 | 99.8  | 98.3  | 612540 |
| CNTNAP1 | 161.2 | 99.2  | 97.5  | 616286 |
| CNTNAP2 | 148.0 | 100.0 | 99.9  | 610042 |
| COA6    | 78.7  | 98.8  | 91.9  | 616501 |
| COASY   | 168.5 | 100.0 | 100.0 | 615643 |
| COG1    | 124.2 | 100.0 | 99.9  | 611209 |
| COG4    | 123.8 | 100.0 | 99.9  | 613489 |
| COG5    | 107.0 | 97.4  | 93.8  | 613612 |
| COG6    | 78.4  | 95.0  | 85.9  | 614576 |
| COG7    | 125.1 | 100.0 | 100.0 | 608779 |
| COG8    | 122.4 | 99.9  | 98.4  | 611182 |
| COL11A1 | 90.8  | 94.9  | 89.6  | 228520 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| COL11A2 | 92.2  | 99.9  | 98.3  | 609706 |
| COL12A1 | 137.5 | 99.5  | 97.5  | 616470 |
| COL13A1 | 85.4  | 99.8  | 97.1  | 616720 |
| COL17A1 | 107.9 | 99.2  | 96.6  | 226650 |
| COL18A1 | 88.7  | 93.9  | 87.7  | 267750 |
| COL1A2  | 101.8 | 96.7  | 93.6  | 225320 |
| COL25A1 | 126.8 | 98.4  | 95.8  | 616219 |
| COL4A3  | 89.6  | 97.8  | 95.5  | 203780 |
| COL4A4  | 85.0  | 97.6  | 93.5  | 203780 |
| COL6A1  | 137.2 | 99.5  | 97.8  | 254090 |
| COL6A2  | 165.3 | 99.3  | 98.4  | 254090 |
| COL6A3  | 174.7 | 100.0 | 99.9  | 254090 |
| COL7A1  | 129.5 | 99.6  | 97.5  | 226600 |
| COL9A1  | 121.2 | 99.5  | 96.9  | 614134 |
| COL9A2  | 65.1  | 98.3  | 88.8  | 614284 |
| COLEC11 | 203.0 | 100.0 | 100.0 | 265050 |
| COLQ    | 113.2 | 99.8  | 98.1  | 603034 |
| COQ2    | 89.3  | 96.1  | 93.2  | 607426 |
| COQ4    | 89.8  | 88.4  | 84.9  | 616276 |
| COQ6    | 143.9 | 99.3  | 96.0  | 614650 |
| COQ8A   | 134.3 | 100.0 | 99.1  | 612016 |
| COQ8B   | 90.5  | 100.0 | 99.1  | 615573 |
| COQ9    | 91.4  | 99.9  | 96.6  | 614654 |
| CORO1A  | 154.4 | 99.8  | 96.9  | 615401 |
| COX10   | 241.9 | 100.0 | 99.6  | 256000 |
| COX15   | 98.6  | 100.0 | 99.7  | 615119 |
| COX20   | 58.1  | 83.0  | 65.4  | 220110 |
| COX4I2  | 120.1 | 100.0 | 100.0 | 612714 |
| COX6A1  | 180.6 | 100.0 | 99.4  | 616039 |
| COX6B1  | 159.6 | 100.0 | 100.0 | 220110 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| CP     | 120.0 | 93.9  | 89.6  | 604290 |
| CPA6   | 118.3 | 99.8  | 98.5  | 614418 |
| CPN1   | 118.3 | 100.0 | 98.8  | 212070 |
| CPOX   | 116.8 | 95.2  | 88.1  | 121300 |
| CPS1   | 143.8 | 100.0 | 99.8  | 237300 |
| CPT1A  | 169.3 | 100.0 | 98.7  | 255120 |
| CPT2   | 162.8 | 97.2  | 95.4  | 600649 |
| CR2    | 160.7 | 100.0 | 99.8  | 614699 |
| CRADD  | 115.2 | 99.9  | 98.5  | 614499 |
| CRB1   | 191.8 | 100.0 | 100.0 | 600105 |
| CRB2   | 112.4 | 99.4  | 94.7  | 616220 |
| CRBN   | 130.7 | 87.8  | 83.8  | 607417 |
| CRIPT  | 34.5  | 96.5  | 74.8  | 615789 |
| CRLF1  | 105.6 | 90.9  | 89.2  | 272430 |
| CRTAP  | 110.4 | 99.8  | 97.3  | 610682 |
| CRYAA  | 135.3 | 92.7  | 86.2  | 604219 |
| CRYBB1 | 129.1 | 100.0 | 99.4  | 611544 |
| CRYBB3 | 144.3 | 100.0 | 100.0 | 609741 |
| CSF2RB | 94.8  | 99.6  | 97.8  | 614370 |
| CSPP1  | 112.0 | 99.8  | 97.8  | 615636 |
| CSTA   | 119.0 | 99.9  | 99.0  | 607936 |
| CSTB   | 82.5  | 97.1  | 82.7  | 254800 |
| CTC1   | 119.0 | 100.0 | 99.8  | 612199 |
| CTDP1  | 105.0 | 86.6  | 83.6  | 604168 |
| CTNS   | 120.1 | 100.0 | 99.9  | 219800 |
| CTPS1  | 143.1 | 100.0 | 99.6  | 615897 |
| CTSA   | 134.1 | 100.0 | 99.4  | 256540 |
| CTSC   | 127.5 | 100.0 | 100.0 | 245010 |
| CTSD   | 163.7 | 98.0  | 95.3  | 610127 |
| CTSF   | 112.8 | 84.2  | 80.2  | 615362 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| CTSK    | 105.0 | 100.0 | 99.9  | 265800 |
| CUBN    | 127.8 | 99.8  | 98.4  | 261100 |
| CUL7    | 149.6 | 99.8  | 97.9  | 273750 |
| CWF19L1 | 119.1 | 99.5  | 96.7  | 616127 |
| CYB5A   | 133.5 | 100.0 | 100.0 | 250790 |
| CYB5R3  | 147.3 | 98.0  | 98.0  | 250800 |
| CYBA    | 97.3  | 77.9  | 71.0  | 233690 |
| CYC1    | 184.5 | 88.1  | 86.8  | 615453 |
| CYP11A1 | 123.9 | 99.6  | 97.7  | 613743 |
| CYP11B1 | 175.9 | 100.0 | 100.0 | 202010 |
| CYP11B2 | 173.4 | 100.0 | 100.0 | 203400 |
| CYP17A1 | 135.0 | 100.0 | 99.7  | 202110 |
| CYP19A1 | 160.6 | 99.1  | 97.3  | 613546 |
| CYP1B1  | 134.8 | 100.0 | 100.0 | 231300 |
| CYP24A1 | 165.3 | 100.0 | 100.0 | 143880 |
| CYP26B1 | 178.1 | 100.0 | 99.9  | 614416 |
| CYP26C1 | 87.2  | 99.5  | 95.6  | 614974 |
| CYP27A1 | 175.1 | 98.3  | 96.1  | 213700 |
| CYP27B1 | 137.1 | 100.0 | 99.1  | 264700 |
| CYP2C8  | 109.1 | 98.0  | 93.7  | 601129 |
| CYP2R1  | 138.5 | 96.4  | 86.6  | 600081 |
| CYP2U1  | 119.2 | 93.7  | 91.2  | 615030 |
| CYP4F22 | 127.7 | 100.0 | 99.7  | 604777 |
| CYP4V2  | 147.5 | 99.8  | 98.5  | 210370 |
| CYP7B1  | 93.2  | 94.7  | 87.7  | 613812 |
| D2HGDH  | 134.5 | 97.5  | 95.2  | 600721 |
| DAG1    | 220.8 | 100.0 | 100.0 | 613818 |
| DARS    | 98.6  | 98.7  | 93.8  | 615281 |
| DARS2   | 122.3 | 100.0 | 99.6  | 611105 |
| DBH     | 140.7 | 100.0 | 99.8  | 223360 |



|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| DBT     | 102.1 | 97.3  | 93.8  | 248600 |
| DCAF17  | 91.9  | 95.6  | 89.3  | 241080 |
| DCC     | 138.5 | 100.0 | 99.9  | 617542 |
| DCDC2   | 150.5 | 99.9  | 99.6  | 616217 |
| DCHS1   | 160.1 | 99.8  | 99.2  | 601390 |
| DCLRE1C | 128.8 | 98.2  | 94.5  | 603554 |
| DCPS    | 143.8 | 100.0 | 99.8  | 616459 |
| DDB2    | 162.4 | 100.0 | 99.7  | 278740 |
| DDC     | 101.0 | 99.1  | 95.0  | 608643 |
| DDHD1   | 141.8 | 97.1  | 94.8  | 609340 |
| DDHD2   | 149.7 | 99.9  | 98.0  | 615033 |
| DDR2    | 155.0 | 100.0 | 99.9  | 271665 |
| DDX11   | 113.9 | 86.0  | 81.0  | 613398 |
| DDX59   | 151.7 | 99.7  | 97.6  | 174300 |
| DENND5A | 123.0 | 99.8  | 97.9  | 617281 |
| DFNB59  | 123.6 | 100.0 | 99.2  | 610220 |
| DGKE    | 142.3 | 99.5  | 95.2  | 615008 |
| DGUOK   | 119.2 | 100.0 | 100.0 | 251880 |
| DHCR24  | 183.0 | 100.0 | 100.0 | 602398 |
| DHCR7   | 158.3 | 100.0 | 100.0 | 270400 |
| DHDDS   | 93.5  | 97.8  | 94.8  | 613861 |
| DHFR    | 48.4  | 91.1  | 72.0  | 613839 |
| DHH     | 117.7 | 100.0 | 100.0 | 233420 |
| DHODH   | 92.2  | 100.0 | 99.9  | 263750 |
| DHTKD1  | 141.0 | 99.6  | 98.2  | 204750 |
| DIAPH1  | 120.7 | 99.3  | 97.8  | 616632 |
| DIS3L2  | 158.5 | 99.8  | 99.0  | 267000 |
| DLAT    | 91.6  | 99.1  | 96.0  | 245348 |
| DLD     | 123.5 | 99.9  | 98.6  | 246900 |
| DLL3    | 64.1  | 88.8  | 79.9  | 277300 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| DMGDH    | 157.0 | 98.8  | 97.2  | 605850 |
| DMP1     | 159.5 | 99.9  | 99.1  | 241520 |
| DNAAF1   | 115.8 | 100.0 | 99.7  | 613193 |
| DNAAF2   | 105.1 | 99.7  | 96.9  | 612518 |
| DNAAF3   | 91.8  | 97.7  | 90.6  | 606763 |
| DNAAF4   | 79.6  | 96.3  | 84.1  | 615482 |
| DNAAF5   | 107.9 | 84.5  | 78.2  | 614874 |
| DNAH11   | 134.0 | 99.8  | 98.4  | 611884 |
| DNAH5    | 123.8 | 99.7  | 98.5  | 608644 |
| DNAI1    | 135.3 | 100.0 | 100.0 | 244400 |
| DNAI2    | 156.6 | 98.4  | 95.5  | 612444 |
| DNAJB2   | 102.0 | 100.0 | 100.0 | 614881 |
| DNAJC12  | 129.3 | 87.4  | 87.3  | 617384 |
| DNAJC19  | 97.9  | 98.5  | 90.0  | 610198 |
| DNAJC21  | 125.7 | 99.8  | 98.5  | 617052 |
| DNAJC6   | 160.8 | 99.9  | 98.9  | 615528 |
| DNAL1    | 99.0  | 95.7  | 84.5  | 614017 |
| DNASE1L3 | 141.3 | 100.0 | 100.0 | 614420 |
| DNM1L    | 123.5 | 99.7  | 96.6  | 614388 |
| DNMT3B   | 124.8 | 100.0 | 100.0 | 242860 |
| DOCK2    | 143.8 | 100.0 | 99.9  | 616433 |
| DOCK6    | 119.9 | 98.9  | 96.5  | 614219 |
| DOCK7    | 114.4 | 97.9  | 95.6  | 615859 |
| DOCK8    | 129.1 | 100.0 | 99.8  | 243700 |
| DOK7     | 105.7 | 93.3  | 92.5  | 254300 |
| DOLK     | 202.9 | 100.0 | 99.9  | 610768 |
| DONSON   | 104.9 | 83.9  | 78.3  | 617604 |
| DPAGT1   | 110.7 | 100.0 | 100.0 | 608093 |
| DPH1     | 157.1 | 100.0 | 99.7  | 616901 |
| DPM1     | 131.1 | 91.7  | 86.7  | 608799 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| DPM2     | 102.1 | 100.0 | 99.4  | 615042 |
| DPM3     | 183.9 | 100.0 | 100.0 | 612937 |
| DPY19L2  | 94.8  | 72.9  | 66.6  | 613958 |
| DPYD     | 158.3 | 95.6  | 93.7  | 274270 |
| DPYS     | 133.5 | 100.0 | 99.5  | 222748 |
| DRAM2    | 131.8 | 100.0 | 99.7  | 616502 |
| DRC1     | 97.0  | 99.9  | 98.6  | 615294 |
| DSC2     | 128.5 | 99.4  | 96.2  | 610476 |
| DSC3     | 87.1  | 97.2  | 89.6  | 613102 |
| DSG4     | 198.4 | 98.5  | 95.7  | 607903 |
| DSP      | 154.0 | 100.0 | 99.8  | 609638 |
| DST      | 154.1 | 99.7  | 98.2  | 614653 |
| DTNBP1   | 115.2 | 99.3  | 95.1  | 614076 |
| DUOX2    | 136.4 | 96.7  | 94.8  | 607200 |
| DUOXA2   | 122.2 | 100.0 | 99.9  | 274900 |
| DYM      | 101.3 | 97.2  | 94.8  | 223800 |
| DYNC2H1  | 90.5  | 96.6  | 87.0  | 613091 |
| DYNC2LI1 | 95.1  | 99.3  | 96.0  | 617088 |
| DYSF     | 133.1 | 100.0 | 99.8  | 254130 |
| EARS2    | 103.4 | 99.7  | 98.3  | 614924 |
| ECEL1    | 100.7 | 88.8  | 83.1  | 615065 |
| ECHS1    | 112.8 | 99.8  | 97.8  | 616277 |
| ECM1     | 170.8 | 100.0 | 99.7  | 247100 |
| EDAR     | 138.6 | 100.0 | 99.6  | 224900 |
| EDARADD  | 99.1  | 99.3  | 93.3  | 614941 |
| EDC3     | 144.7 | 100.0 | 99.6  | 616460 |
| EDN1     | 145.5 | 100.0 | 100.0 | 615706 |
| EDN3     | 134.4 | 100.0 | 99.5  | 613265 |
| EDNRB    | 131.0 | 95.6  | 90.9  | 600501 |
| EFEMP2   | 120.9 | 100.0 | 99.9  | 614437 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| EGF     | 135.2 | 100.0 | 99.8  | 611718 |
| EGFR    | 160.8 | 100.0 | 99.1  | 616069 |
| EGR2    | 124.4 | 100.0 | 100.0 | 145900 |
| EIF2AK3 | 147.1 | 95.1  | 91.3  | 226980 |
| EIF2AK4 | 146.3 | 99.8  | 98.0  | 234810 |
| EIF2B1  | 149.9 | 100.0 | 100.0 | 603896 |
| EIF2B2  | 131.9 | 100.0 | 99.5  | 603896 |
| EIF2B3  | 163.8 | 100.0 | 100.0 | 603896 |
| EIF2B4  | 146.0 | 100.0 | 99.5  | 603896 |
| EIF2B5  | 128.0 | 99.6  | 97.9  | 603896 |
| EIF4A3  | 106.8 | 100.0 | 99.9  | 268305 |
| ELAC2   | 123.8 | 100.0 | 99.3  | 615440 |
| ELOVL4  | 91.9  | 99.9  | 98.0  | 614457 |
| ELP1    | 142.6 | 99.7  | 98.1  | 223900 |
| ELP2    | 125.5 | 99.2  | 96.9  | 617270 |
| EMC1    | 124.3 | 100.0 | 99.8  | 616875 |
| EMG1    | 137.7 | 100.0 | 100.0 | 211180 |
| EMP2    | 101.1 | 99.7  | 96.9  | 615861 |
| ENAM    | 148.9 | 100.0 | 99.9  | 204650 |
| ENO3    | 179.3 | 100.0 | 100.0 | 612932 |
| ENPP1   | 134.8 | 92.4  | 83.2  | 208000 |
| ENTPD1  | 165.1 | 100.0 | 99.4  | 615683 |
| EOGT    | 119.9 | 79.5  | 78.4  | 615297 |
| EPB41   | 135.5 | 98.7  | 95.6  | 611804 |
| EPB42   | 160.7 | 100.0 | 99.7  | 612690 |
| EPCAM   | 64.5  | 93.3  | 79.8  | 613244 |
| EPG5    | 126.0 | 99.3  | 97.7  | 242840 |
| EPHX1   | 122.6 | 98.8  | 96.1  | 607748 |
| EPM2A   | 110.1 | 86.2  | 84.0  | 254780 |
| EPRS    | 126.3 | 100.0 | 99.2  | 617951 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| ERBB3   | 139.2 | 100.0 | 99.9  | 607598 |
| ERCC1   | 76.6  | 100.0 | 97.3  | 610758 |
| ERCC2   | 123.7 | 100.0 | 99.7  | 610756 |
| ERCC3   | 113.2 | 99.9  | 98.9  | 601675 |
| ERCC4   | 139.2 | 100.0 | 99.5  | 615272 |
| ERCC5   | 139.8 | 100.0 | 99.4  | 616570 |
| ERCC6   | 191.3 | 100.0 | 99.9  | 214150 |
| ERCC6L2 | 107.6 | 99.7  | 97.7  | 615715 |
| ERCC8   | 89.5  | 92.9  | 78.4  | 216400 |
| ERLIN1  | 146.9 | 100.0 | 100.0 | 615681 |
| ERLIN2  | 156.0 | 100.0 | 99.3  | 611225 |
| ESCO2   | 105.2 | 97.3  | 90.4  | 268300 |
| ESPN    | 28.6  | 44.2  | 35.3  | 609006 |
| ESR1    | 127.5 | 99.9  | 99.4  | 615363 |
| ESRRB   | 119.7 | 100.0 | 99.2  | 608565 |
| ETFA    | 143.3 | 100.0 | 99.4  | 231680 |
| ETFB    | 126.6 | 100.0 | 100.0 | 231680 |
| ETFDH   | 105.4 | 100.0 | 99.3  | 231680 |
| ETHE1   | 85.5  | 99.3  | 95.8  | 602473 |
| EVC     | 110.4 | 93.2  | 89.8  | 225500 |
| EVC2    | 119.3 | 96.4  | 94.3  | 225500 |
| EXOSC2  | 142.0 | 100.0 | 100.0 | 617763 |
| EXOSC3  | 88.5  | 97.3  | 89.4  | 614678 |
| EXOSC8  | 80.1  | 91.8  | 76.9  | 616081 |
| EXOSC9  | 129.8 | 97.5  | 87.4  | 1      |
| EXPH5   | 183.3 | 100.0 | 99.9  | 615028 |
| EYS     | 135.8 | 98.9  | 94.9  | 602772 |
| F10     | 185.1 | 99.0  | 98.3  | 227600 |
| F11     | 155.0 | 100.0 | 100.0 | 612416 |
| F12     | 111.4 | 100.0 | 99.5  | 234000 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| F13A1   | 147.3 | 100.0 | 99.4  | 613225 |
| F13B    | 113.5 | 96.6  | 87.6  | 613235 |
| F2      | 124.2 | 99.8  | 98.1  | 613679 |
| F5      | 173.5 | 99.0  | 97.3  | 227400 |
| F7      | 166.6 | 100.0 | 98.5  | 227500 |
| FA2H    | 94.1  | 87.9  | 79.9  | 612319 |
| FADD    | 142.8 | 100.0 | 99.6  | 613759 |
| FAH     | 151.3 | 100.0 | 99.9  | 276700 |
| FAM126A | 125.2 | 97.3  | 95.2  | 610532 |
| FAM161A | 115.2 | 98.5  | 95.0  | 606068 |
| FAM20A  | 105.4 | 98.4  | 92.1  | 204690 |
| FAM20C  | 101.3 | 100.0 | 98.9  | 259775 |
| FANCA   | 123.3 | 99.8  | 98.5  | 227650 |
| FANCB   | 68.4  | 96.7  | 87.9  | 300514 |
| FANCC   | 121.6 | 99.4  | 97.1  | 227645 |
| FANCD2  | 127.6 | 98.7  | 95.5  | 227646 |
| FANCE   | 108.0 | 85.9  | 84.6  | 600901 |
| FANCF   | 166.8 | 100.0 | 100.0 | 603467 |
| FANCG   | 147.7 | 100.0 | 100.0 | 614082 |
| FANCI   | 152.1 | 99.5  | 97.5  | 609053 |
| FANCL   | 87.8  | 99.4  | 94.7  | 614083 |
| FAR1    | 80.4  | 96.3  | 92.4  | 616154 |
| FARS2   | 207.7 | 100.0 | 100.0 | 614946 |
| FASTKD2 | 118.9 | 99.5  | 96.8  | 220110 |
| FAT4    | 224.5 | 100.0 | 99.9  | 615546 |
| FBLN5   | 119.6 | 91.8  | 91.1  | 219100 |
| FBP1    | 127.0 | 100.0 | 98.8  | 229700 |
| FBXL4   | 189.8 | 100.0 | 100.0 | 615471 |
| FBXO31  | 108.8 | 93.5  | 89.0  | 615979 |
| FBXO7   | 189.4 | 98.5  | 93.3  | 260300 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| FCGR3A | 225.0 | 99.6  | 97.7  | 615707 |
| FCN3   | 127.8 | 100.0 | 99.4  | 613860 |
| FDXR   | 93.4  | 100.0 | 99.1  | 617717 |
| FECH   | 121.9 | 99.9  | 99.4  | 177000 |
| FERMT1 | 104.9 | 98.9  | 96.3  | 173650 |
| FERMT3 | 122.4 | 100.0 | 98.9  | 612840 |
| FEZF1  | 158.8 | 99.9  | 99.3  | 616030 |
| FGA    | 157.0 | 99.0  | 96.6  | 202400 |
| FGB    | 190.8 | 99.7  | 97.9  | 202400 |
| FGD4   | 111.9 | 99.3  | 97.3  | 609311 |
| FGF23  | 106.0 | 99.9  | 97.8  | 617993 |
| FGF3   | 73.9  | 92.0  | 75.7  | 610706 |
| FGG    | 137.0 | 99.3  | 96.5  | 202400 |
| FH     | 146.4 | 91.7  | 87.6  | 606812 |
| FIBP   | 123.3 | 100.0 | 100.0 | 617107 |
| FIG4   | 154.9 | 99.8  | 98.4  | 611228 |
| FKBP10 | 158.6 | 96.9  | 92.8  | 610968 |
| FKBP14 | 74.3  | 100.0 | 99.4  | 614557 |
| FKRP   | 94.5  | 100.0 | 99.7  | 613153 |
| FKTN   | 120.0 | 99.2  | 94.2  | 611615 |
| FLAD1  | 191.6 | 100.0 | 98.9  | 255100 |
| FLG    | 234.1 | 100.0 | 99.9  | 146700 |
| FLNB   | 149.9 | 99.8  | 99.2  | 272460 |
| FLVCR1 | 139.5 | 99.2  | 95.8  | 609033 |
| FLVCR2 | 159.7 | 100.0 | 100.0 | 225790 |
| FMN2   | 86.6  | 83.1  | 77.7  | 616193 |
| FMO3   | 153.5 | 99.9  | 99.2  | 602079 |
| FOLR1  | 150.4 | 100.0 | 100.0 | 613068 |
| FOXE1  | 29.3  | 72.3  | 56.2  | 241850 |
| FOXI1  | 152.5 | 100.0 | 100.0 | 600791 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| FOXN1   | 112.5 | 100.0 | 99.5  | 601705 |
| FOXRED1 | 136.6 | 100.0 | 99.6  | 256000 |
| FRAS1   | 147.8 | 100.0 | 99.7  | 219000 |
| FREM1   | 138.4 | 99.9  | 99.1  | 248450 |
| FREM2   | 182.4 | 100.0 | 99.5  | 219000 |
| FRMD4A  | 116.7 | 91.4  | 90.3  | 616819 |
| FRRS1L  | 103.1 | 68.3  | 63.4  | 616981 |
| FSHB    | 149.1 | 100.0 | 100.0 | 229070 |
| FSHR    | 140.9 | 100.0 | 98.8  | 233300 |
| FTCD    | 89.8  | 94.6  | 89.8  | 229100 |
| FTO     | 118.9 | 83.7  | 82.5  | 612938 |
| FUCA1   | 135.0 | 100.0 | 99.5  | 230000 |
| FUT8    | 166.1 | 99.9  | 98.8  | 618005 |
| FXN     | 75.2  | 85.7  | 75.9  | 229300 |
| FYCO1   | 123.7 | 100.0 | 100.0 | 610019 |
| FZD6    | 208.6 | 100.0 | 100.0 | 614157 |
| G6PC    | 180.7 | 100.0 | 100.0 | 232200 |
| G6PC3   | 123.7 | 100.0 | 100.0 | 612541 |
| GAA     | 128.5 | 100.0 | 99.9  | 232300 |
| GAD1    | 128.7 | 99.9  | 98.4  | 603513 |
| GALC    | 100.6 | 98.9  | 94.6  | 245200 |
| GALE    | 154.8 | 100.0 | 100.0 | 230350 |
| GALK1   | 125.4 | 100.0 | 99.7  | 230200 |
| GALNS   | 93.2  | 99.0  | 95.6  | 253000 |
| GALNT3  | 128.2 | 99.2  | 96.0  | 211900 |
| GALT    | 168.7 | 100.0 | 100.0 | 230400 |
| GAMT    | 93.5  | 90.9  | 80.7  | 612736 |
| GAN     | 190.0 | 100.0 | 99.9  | 256850 |
| GAS8    | 150.7 | 99.8  | 99.4  | 616726 |
| GATM    | 150.6 | 100.0 | 100.0 | 612718 |



|       |       |       |       |        |
|-------|-------|-------|-------|--------|
| GBA   | 240.3 | 100.0 | 100.0 | 608013 |
| GBA2  | 176.2 | 99.9  | 99.3  | 614409 |
| GBE1  | 145.5 | 99.6  | 97.2  | 232500 |
| GCDH  | 147.6 | 99.9  | 99.1  | 231670 |
| GCH1  | 74.4  | 97.0  | 86.5  | 233910 |
| GCK   | 141.4 | 100.0 | 100.0 | 606176 |
| GCLC  | 133.2 | 99.9  | 98.9  | 230450 |
| GCNT2 | 166.8 | 99.5  | 99.5  | 116700 |
| GCSH  | 34.2  | 83.1  | 67.8  | 605899 |
| GDAP1 | 163.1 | 99.3  | 96.1  | 607706 |
| GDF1  | 19.5  | 65.0  | 48.4  | 208530 |
| GDF5  | 141.8 | 100.0 | 100.0 | 201250 |
| GFER  | 76.1  | 92.9  | 75.4  | 613076 |
| GFM1  | 100.3 | 99.2  | 95.3  | 609060 |
| GFPT1 | 144.4 | 99.9  | 97.6  | 610542 |
| GGCX  | 115.3 | 100.0 | 99.7  | 277450 |
| GGT1  | 12.9  | 19.8  | 17.2  | 231950 |
| GH1   | 175.2 | 100.0 | 100.0 | 262400 |
| GHR   | 212.3 | 99.8  | 99.5  | 262500 |
| GHRHR | 116.4 | 95.3  | 94.7  | 612781 |
| GHSR  | 206.0 | 99.9  | 98.4  | 604271 |
| GIF   | 141.2 | 100.0 | 99.9  | 261000 |
| GIPC3 | 103.3 | 91.8  | 85.5  | 601869 |
| GJA1  | 246.4 | 100.0 | 100.0 | 218400 |
| GJB2  | 205.1 | 100.0 | 100.0 | 220290 |
| GJB6  | 185.4 | 100.0 | 100.0 | 612645 |
| GJC2  | 41.9  | 68.9  | 58.6  | 608804 |
| GLB1  | 94.3  | 99.6  | 97.0  | 230500 |
| GLDC  | 78.9  | 90.6  | 82.7  | 605899 |
| GLE1  | 110.8 | 100.0 | 99.7  | 253310 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| GLIS2  | 109.0 | 99.9  | 98.2  | 611498 |
| GLIS3  | 133.4 | 99.9  | 99.3  | 610199 |
| GLRA1  | 123.3 | 100.0 | 100.0 | 149400 |
| GLRB   | 98.6  | 96.6  | 88.8  | 614619 |
| GLRX5  | 108.2 | 92.6  | 83.8  | 205950 |
| GLUL   | 108.8 | 99.9  | 98.2  | 610015 |
| GLYCTK | 202.6 | 100.0 | 99.5  | 220120 |
| GM2A   | 139.6 | 100.0 | 100.0 | 272750 |
| GMPPA  | 136.8 | 100.0 | 99.9  | 615510 |
| GMPPB  | 228.5 | 100.0 | 100.0 | 615350 |
| GNAT2  | 130.7 | 99.9  | 99.1  | 613856 |
| GNB3   | 179.0 | 100.0 | 100.0 | 617024 |
| GNB5   | 125.9 | 99.9  | 98.3  | 617173 |
| GNE    | 153.7 | 100.0 | 99.8  | 605820 |
| GNMT   | 147.2 | 99.4  | 97.0  | 606664 |
| GNPAT  | 133.6 | 99.4  | 96.4  | 222765 |
| GNPTAB | 167.7 | 98.3  | 97.4  | 252500 |
| GNPTG  | 151.6 | 96.1  | 89.7  | 252605 |
| GNRHR  | 161.9 | 100.0 | 100.0 | 146110 |
| GNS    | 107.9 | 96.9  | 92.0  | 252940 |
| GORAB  | 176.3 | 99.7  | 97.8  | 231070 |
| GOSR2  | 127.2 | 95.9  | 95.0  | 614018 |
| GP1BA  | 153.0 | 97.0  | 94.3  | 231200 |
| GP1BB  | 34.5  | 74.2  | 64.3  | 231200 |
| GP6    | 136.5 | 100.0 | 100.0 | 614201 |
| GP9    | 123.3 | 96.6  | 89.3  | 231200 |
| GPAA1  | 130.0 | 96.4  | 95.2  | 617810 |
| GPC6   | 142.0 | 100.0 | 100.0 | 258315 |
| GPD1   | 93.5  | 99.9  | 99.1  | 614480 |
| GPHN   | 167.2 | 98.4  | 96.9  | 615501 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| GPI     | 142.6 | 100.0 | 99.5  | 613470 |
| GPIHBP1 | 119.7 | 99.9  | 99.2  | 615947 |
| GPNMB   | 177.8 | 100.0 | 100.0 | 617920 |
| GPR179  | 133.6 | 100.0 | 99.7  | 614565 |
| GPSM2   | 112.9 | 99.8  | 97.0  | 604213 |
| GPT2    | 138.0 | 98.2  | 90.9  | 616281 |
| GPX4    | 119.2 | 85.2  | 76.6  | 250220 |
| GRHPR   | 112.5 | 85.1  | 78.2  | 260000 |
| GRID2   | 175.4 | 100.0 | 99.9  | 616204 |
| GRIK2   | 133.2 | 96.0  | 94.7  | 611092 |
| GRIP1   | 130.8 | 100.0 | 99.9  | 617667 |
| GRK1    | 126.4 | 100.0 | 99.9  | 613411 |
| GRM1    | 185.8 | 100.0 | 99.9  | 614831 |
| GRM6    | 151.7 | 93.3  | 86.7  | 257270 |
| GRN     | 184.5 | 100.0 | 100.0 | 614706 |
| GRXCR1  | 183.7 | 100.0 | 99.8  | 613285 |
| GSC     | 85.4  | 86.9  | 74.5  | 602471 |
| GSS     | 104.0 | 100.0 | 99.8  | 266130 |
| GTF2E2  | 83.5  | 96.5  | 91.0  | 616943 |
| GTF2H5  | 113.6 | 100.0 | 99.1  | 616395 |
| GTPBP3  | 137.4 | 100.0 | 99.7  | 616198 |
| GUCY1A3 | 171.3 | 99.4  | 98.0  | 615750 |
| GUCY2C  | 135.2 | 100.0 | 99.7  | 614665 |
| GUCY2D  | 91.3  | 98.3  | 91.1  | 215500 |
| GUSB    | 116.1 | 92.2  | 89.4  | 253220 |
| GYG1    | 157.8 | 100.0 | 99.6  | 613507 |
| GYS1    | 110.8 | 100.0 | 98.5  | 611556 |
| GYS2    | 150.2 | 98.5  | 93.9  | 240600 |
| H6PD    | 169.5 | 99.0  | 99.0  | 604931 |
| HACE1   | 125.3 | 99.2  | 95.0  | 616756 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| HADH    | 110.8 | 98.0  | 95.1  | 231530 |
| HADHA   | 84.4  | 96.5  | 90.3  | 609016 |
| HADHB   | 80.5  | 92.5  | 79.5  | 609015 |
| HAMP    | 175.6 | 100.0 | 100.0 | 613313 |
| HARS    | 159.4 | 100.0 | 100.0 | 614504 |
| HAX1    | 136.5 | 100.0 | 100.0 | 610738 |
| HBB     | 176.7 | 100.0 | 100.0 | 603903 |
| HELLS   | 93.7  | 94.1  | 86.8  | 616911 |
| HEPACAM | 142.3 | 81.4  | 76.1  | 613925 |
| HERC1   | 173.7 | 99.9  | 99.4  | 617011 |
| HERC2   | 114.4 | 80.9  | 77.9  | 615516 |
| HES7    | 29.1  | 64.9  | 42.6  | 613686 |
| HESX1   | 57.6  | 99.2  | 92.6  | 182230 |
| HEXA    | 118.3 | 93.8  | 92.2  | 272800 |
| HEXB    | 129.7 | 99.4  | 94.0  | 268800 |
| HFE     | 142.0 | 100.0 | 99.7  | 235200 |
| HFE2    | 116.8 | 100.0 | 100.0 | 602390 |
| HFM1    | 42.8  | 90.3  | 76.7  | 615724 |
| HGD     | 127.8 | 100.0 | 99.8  | 203500 |
| HGF     | 146.9 | 99.4  | 96.9  | 608265 |
| HGSNAT  | 101.0 | 86.4  | 85.7  | 252930 |
| HIBCH   | 67.7  | 92.7  | 69.5  | 250620 |
| HIKESHI | 61.7  | 90.9  | 79.7  | 616881 |
| HINT1   | 60.0  | 98.5  | 88.0  | 137200 |
| HK1     | 143.4 | 100.0 | 99.9  | 235700 |
| HLCS    | 172.8 | 100.0 | 100.0 | 253270 |
| HMGCL   | 143.3 | 100.0 | 99.9  | 246450 |
| HMGCS2  | 131.5 | 100.0 | 100.0 | 605911 |
| HMOX1   | 128.7 | 95.8  | 89.5  | 614034 |
| HMX1    | 23.0  | 56.8  | 42.0  | 612109 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| HNMT    | 135.0 | 100.0 | 99.7  | 616739 |
| HOGA1   | 147.5 | 99.8  | 98.1  | 613616 |
| HOXA1   | 165.3 | 100.0 | 100.0 | 601536 |
| HOXA2   | 74.1  | 99.5  | 95.6  | 612290 |
| HOXB1   | 104.5 | 100.0 | 100.0 | 614744 |
| HOXC13  | 104.9 | 97.5  | 91.1  | 614931 |
| HPCA    | 283.4 | 100.0 | 100.0 | 224500 |
| HPD     | 137.8 | 100.0 | 100.0 | 276710 |
| HPGD    | 88.0  | 100.0 | 98.5  | 259100 |
| HPS1    | 117.8 | 100.0 | 99.3  | 203300 |
| HPS3    | 135.2 | 99.6  | 96.4  | 614072 |
| HPS4    | 141.9 | 100.0 | 100.0 | 614073 |
| HPS5    | 133.0 | 99.9  | 98.7  | 614074 |
| HPS6    | 139.1 | 91.0  | 84.3  | 614075 |
| HPSE2   | 110.2 | 98.8  | 95.4  | 236730 |
| HR      | 94.9  | 97.3  | 94.2  | 203655 |
| HSD11B2 | 165.2 | 85.7  | 82.5  | 218030 |
| HSD17B3 | 156.4 | 100.0 | 100.0 | 264300 |
| HSD17B4 | 95.1  | 93.9  | 90.8  | 261515 |
| HSD3B2  | 189.2 | 100.0 | 100.0 | 201810 |
| HSD3B7  | 136.3 | 98.2  | 91.0  | 607765 |
| HSPA9   | 91.6  | 91.1  | 85.9  | 616854 |
| HSPD1   | 96.5  | 98.3  | 93.2  | 612233 |
| HSPG2   | 121.3 | 99.4  | 98.2  | 224410 |
| HTRA1   | 98.2  | 84.5  | 81.4  | 600142 |
| HYAL1   | 115.3 | 100.0 | 100.0 | 601492 |
| HYDIN   | 133.6 | 99.9  | 99.5  | 608647 |
| HYLS1   | 171.1 | 100.0 | 100.0 | 236680 |
| IARS    | 148.8 | 99.8  | 98.6  | 617093 |
| IARS2   | 131.5 | 100.0 | 99.9  | 616007 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| ICK     | 131.6 | 99.9  | 98.2  | 612651 |
| ICOS    | 160.2 | 100.0 | 100.0 | 607594 |
| IDH3B   | 165.5 | 95.9  | 95.4  | 612572 |
| IDUA    | 123.0 | 88.1  | 80.0  | 607014 |
| IER3IP1 | 73.0  | 93.2  | 82.2  | 614231 |
| IFNGR1  | 138.5 | 99.2  | 97.3  | 209950 |
| IFNGR2  | 142.3 | 93.2  | 93.1  | 614889 |
| IFT122  | 152.0 | 100.0 | 99.9  | 218330 |
| IFT140  | 114.7 | 99.9  | 99.0  | 266920 |
| IFT172  | 116.5 | 100.0 | 99.6  | 615630 |
| IFT43   | 114.8 | 100.0 | 100.0 | 614099 |
| IFT80   | 57.8  | 87.6  | 70.7  | 611263 |
| IFT81   | 92.9  | 88.3  | 81.2  | 617895 |
| IGF1    | 122.5 | 100.0 | 100.0 | 608747 |
| IGF1R   | 144.0 | 100.0 | 99.8  | 270450 |
| IGFALS  | 79.7  | 99.9  | 96.8  | 615961 |
| IGFBP7  | 71.6  | 91.7  | 83.5  | 614224 |
| IGHM    | 185.2 | 100.0 | 100.0 | 601495 |
| IGHMBP2 | 107.8 | 99.3  | 96.0  | 604320 |
| IGKC    | 157.9 | 100.0 | 100.0 | 614102 |
| IGLL1   | 86.2  | 99.3  | 94.9  | 613500 |
| IHH     | 129.3 | 100.0 | 100.0 | 607778 |
| IKBKB   | 123.5 | 98.5  | 94.2  | 615592 |
| IL10RA  | 141.9 | 100.0 | 99.9  | 613148 |
| IL10RB  | 168.8 | 98.7  | 96.1  | 612567 |
| IL11RA  | 139.9 | 100.0 | 99.5  | 614188 |
| IL12B   | 121.1 | 100.0 | 99.9  | 614890 |
| IL12RB1 | 124.3 | 97.0  | 94.7  | 614891 |
| IL17RC  | 96.1  | 99.8  | 99.0  | 616445 |
| IL1RN   | 162.8 | 100.0 | 100.0 | 612852 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| IL21R  | 128.5 | 100.0 | 100.0 | 615207 |
| IL2RA  | 116.4 | 100.0 | 99.5  | 606367 |
| IL36RN | 99.0  | 100.0 | 100.0 | 614204 |
| IL7R   | 129.5 | 99.9  | 99.4  | 608971 |
| ILDR1  | 107.4 | 100.0 | 99.9  | 609646 |
| IMPA1  | 71.4  | 97.1  | 85.8  | 617323 |
| IMPAD1 | 147.2 | 99.9  | 99.4  | 614078 |
| IMPG2  | 154.3 | 99.5  | 97.8  | 613581 |
| INPP5E | 89.1  | 95.8  | 90.0  | 213300 |
| INPP5K | 108.3 | 100.0 | 99.6  | 617404 |
| INPPL1 | 123.6 | 96.7  | 93.7  | 258480 |
| INSR   | 141.1 | 97.1  | 94.5  | 246200 |
| INVS   | 160.5 | 100.0 | 100.0 | 602088 |
| IQCB1  | 92.2  | 89.3  | 75.4  | 609254 |
| IRAK4  | 95.4  | 98.3  | 90.1  | 610799 |
| IRF8   | 114.7 | 99.6  | 97.4  | 226990 |
| IRX5   | 74.7  | 94.2  | 86.1  | 611174 |
| ISCA2  | 92.0  | 99.7  | 96.9  | 616370 |
| ISCU   | 111.2 | 100.0 | 99.7  | 255125 |
| ISG15  | 160.1 | 100.0 | 100.0 | 616126 |
| ISPD   | 104.4 | 95.2  | 84.8  | 614643 |
| ITCH   | 124.7 | 95.4  | 94.8  | 613385 |
| ITGA2B | 107.2 | 99.6  | 97.4  | 187800 |
| ITGA3  | 141.5 | 99.8  | 98.3  | 614748 |
| ITGA6  | 146.5 | 99.8  | 99.0  | 226730 |
| ITGA7  | 129.6 | 99.6  | 97.6  | 613204 |
| ITGA8  | 122.4 | 99.6  | 98.1  | 191830 |
| ITGB2  | 152.1 | 100.0 | 99.8  | 116920 |
| ITGB3  | 142.2 | 99.3  | 97.4  | 273800 |
| ITGB4  | 150.1 | 97.4  | 94.8  | 226650 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| ITGB6    | 137.0 | 96.5  | 95.2  | 616221 |
| ITK      | 125.2 | 100.0 | 99.6  | 613011 |
| ITPA     | 120.2 | 100.0 | 100.0 | 616647 |
| IVD      | 114.9 | 100.0 | 100.0 | 243500 |
| IYD      | 117.3 | 99.7  | 97.8  | 274800 |
| JAGN1    | 147.3 | 100.0 | 100.0 | 616022 |
| JAK3     | 104.2 | 98.2  | 95.2  | 600802 |
| JAM3     | 158.6 | 100.0 | 100.0 | 613730 |
| JUP      | 145.1 | 100.0 | 99.6  | 601214 |
| KALRN    | 149.0 | 100.0 | 99.5  | 1      |
| KANK2    | 151.4 | 99.9  | 99.5  | 616099 |
| KARS     | 122.6 | 100.0 | 99.3  | 613641 |
| KATNB1   | 141.7 | 100.0 | 100.0 | 616212 |
| KCNE1    | 462.6 | 100.0 | 100.0 | 612347 |
| KCNJ1    | 233.9 | 100.0 | 100.0 | 241200 |
| KCNJ10   | 213.4 | 89.3  | 89.1  | 600791 |
| KCNJ11   | 299.5 | 100.0 | 100.0 | 601820 |
| KCNJ13   | 210.4 | 100.0 | 99.9  | 614186 |
| KCNQ1    | 114.7 | 93.0  | 90.3  | 220400 |
| KCNV2    | 137.7 | 100.0 | 100.0 | 610356 |
| KCTD7    | 166.7 | 95.0  | 95.0  | 611726 |
| KERA     | 191.6 | 100.0 | 100.0 | 217300 |
| KHDC3L   | 110.3 | 99.9  | 99.2  | 614293 |
| KIAA0586 | 114.7 | 98.2  | 92.7  | 616490 |
| KIAA1109 | 144.1 | 99.1  | 97.2  | 617822 |
| KIF1A    | 114.0 | 99.2  | 96.1  | 610357 |
| KIF1BP   | 159.7 | 96.2  | 96.1  | 609460 |
| KIF1C    | 121.3 | 99.9  | 99.1  | 611302 |
| KIF7     | 85.7  | 93.5  | 88.9  | 200990 |
| KISS1R   | 106.4 | 99.5  | 95.3  | 614837 |



|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| KIZ     | 174.2 | 98.3  | 96.0  | 615780 |
| KL      | 179.9 | 97.2  | 96.0  | 617994 |
| KLC2    | 115.9 | 99.8  | 98.2  | 609541 |
| KLHL3   | 141.1 | 100.0 | 99.8  | 614495 |
| KLHL40  | 157.9 | 100.0 | 100.0 | 615348 |
| KLHL41  | 203.5 | 100.0 | 99.6  | 615731 |
| KLK4    | 185.1 | 100.0 | 98.8  | 204700 |
| KLKB1   | 143.4 | 99.6  | 96.7  | 612423 |
| KMT2B   | 120.3 | 94.0  | 91.2  | 1      |
| KNL1    | 113.7 | 98.3  | 95.2  | 604321 |
| KPTN    | 112.1 | 100.0 | 99.9  | 615637 |
| KRT10   | 103.0 | 98.7  | 93.9  | 113800 |
| KRT14   | 59.3  | 89.0  | 82.1  | 601001 |
| KRT18   | 40.2  | 84.8  | 67.8  | 215600 |
| KRT8    | 39.2  | 91.7  | 73.4  | 215600 |
| KRT85   | 108.3 | 98.8  | 95.3  | 602032 |
| L2HGDH  | 129.1 | 98.4  | 97.0  | 236792 |
| LAMA1   | 137.5 | 100.0 | 99.6  | 615960 |
| LAMA2   | 143.5 | 99.9  | 99.5  | 607855 |
| LAMA3   | 147.6 | 99.7  | 99.2  | 226650 |
| LAMB1   | 169.8 | 100.0 | 99.6  | 615191 |
| LAMB2   | 201.7 | 100.0 | 99.8  | 614199 |
| LAMB3   | 123.4 | 100.0 | 99.6  | 226700 |
| LAMC2   | 117.6 | 99.9  | 98.8  | 226700 |
| LAMC3   | 130.5 | 98.3  | 96.1  | 614115 |
| LAMTOR2 | 167.0 | 100.0 | 99.9  | 610798 |
| LARGE1  | 143.0 | 100.0 | 99.6  | 613154 |
| LARP7   | 56.3  | 80.5  | 63.7  | 615071 |
| LARS2   | 143.0 | 100.0 | 100.0 | 615300 |
| LBR     | 87.8  | 93.3  | 83.9  | 215140 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| LCA5    | 127.8 | 97.3  | 95.7  | 604537 |
| LCAT    | 145.6 | 97.8  | 91.7  | 136120 |
| LCT     | 142.0 | 99.9  | 99.1  | 223000 |
| LDHA    | 59.8  | 94.1  | 87.1  | 612933 |
| LDLRAP1 | 156.1 | 95.7  | 91.2  | 603813 |
| LEMD2   | 68.6  | 89.1  | 80.6  | 212500 |
| LEP     | 188.8 | 100.0 | 99.6  | 614962 |
| LEPR    | 109.6 | 93.8  | 90.2  | 614963 |
| LHB     | 29.0  | 97.2  | 73.2  | 228300 |
| LHCGR   | 154.5 | 95.4  | 92.8  | 238320 |
| LHFPL5  | 287.7 | 100.0 | 100.0 | 610265 |
| LHX3    | 84.7  | 94.0  | 80.6  | 221750 |
| LIAS    | 133.7 | 99.5  | 97.1  | 614462 |
| LIFR    | 123.4 | 97.2  | 92.1  | 601559 |
| LIG4    | 165.6 | 100.0 | 99.6  | 606593 |
| LIM2    | 103.2 | 100.0 | 98.6  | 615277 |
| LIMS2   | 110.8 | 93.0  | 92.3  | 616827 |
| LINS1   | 147.8 | 99.9  | 98.0  | 614340 |
| LIPA    | 110.9 | 98.8  | 95.8  | 278000 |
| LIPC    | 115.2 | 100.0 | 99.8  | 614025 |
| LIPE    | 113.4 | 99.9  | 98.4  | 615980 |
| LIPH    | 140.6 | 100.0 | 100.0 | 604379 |
| LIPN    | 125.2 | 99.2  | 95.8  | 613943 |
| LIPT1   | 227.4 | 100.0 | 100.0 | 616299 |
| LIPT2   | 92.2  | 97.3  | 83.2  | 617668 |
| LMAN1   | 129.8 | 99.3  | 94.4  | 227300 |
| LMAN2L  | 127.9 | 100.0 | 99.8  | 616887 |
| LMBR1   | 94.0  | 95.9  | 88.1  | 200500 |
| LMBRD1  | 80.2  | 91.9  | 83.0  | 277380 |
| LMF1    | 132.4 | 99.6  | 97.8  | 246650 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| LMNA    | 89.2  | 97.9  | 91.3  | 605588 |
| LMOD3   | 141.5 | 99.9  | 98.5  | 616165 |
| LONP1   | 141.5 | 97.9  | 96.4  | 600373 |
| LOXHD1  | 136.5 | 100.0 | 99.6  | 613079 |
| LPAR6   | 104.2 | 99.7  | 98.2  | 278150 |
| LPIN1   | 134.6 | 99.8  | 97.8  | 268200 |
| LPIN2   | 111.5 | 100.0 | 99.6  | 609628 |
| LPL     | 147.2 | 100.0 | 100.0 | 238600 |
| LRAT    | 298.3 | 100.0 | 100.0 | 613341 |
| LRBA    | 134.4 | 99.3  | 97.8  | 614700 |
| LRIG2   | 148.5 | 99.4  | 97.5  | 615112 |
| LRIT3   | 142.4 | 94.4  | 94.1  | 615058 |
| LRMDA   | 142.1 | 97.2  | 95.6  | 615179 |
| LRP2    | 176.3 | 100.0 | 99.8  | 222448 |
| LRP4    | 166.6 | 99.1  | 98.9  | 212780 |
| LRP5    | 189.8 | 98.2  | 97.9  | 259770 |
| LRPAP1  | 138.3 | 99.5  | 97.2  | 615431 |
| LRPPRC  | 127.3 | 99.4  | 97.2  | 220111 |
| LRRC6   | 137.9 | 94.7  | 91.0  | 614935 |
| LRSAM1  | 130.4 | 100.0 | 99.7  | 614436 |
| LRTOMT  | 125.9 | 99.8  | 96.6  | 611451 |
| LSS     | 127.8 | 100.0 | 99.1  | 616509 |
| LTBP2   | 104.6 | 99.6  | 97.1  | 614819 |
| LTBP3   | 113.5 | 98.7  | 94.7  | 601216 |
| LTBP4   | 117.1 | 98.6  | 95.0  | 613177 |
| LTC4S   | 54.3  | 71.8  | 61.4  | 614037 |
| LYRM7   | 49.0  | 87.6  | 72.4  | 615838 |
| LYST    | 134.6 | 97.8  | 93.9  | 214500 |
| LZTFL1  | 109.1 | 99.1  | 95.3  | 209900 |
| MAB21L2 | 245.6 | 100.0 | 100.0 | 615877 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| MAG      | 146.5 | 100.0 | 99.5  | 616680 |
| MAK      | 139.1 | 95.6  | 94.1  | 614181 |
| MALT1    | 136.6 | 89.1  | 85.4  | 615468 |
| MAN1B1   | 128.9 | 100.0 | 99.7  | 614202 |
| MAN2B1   | 122.3 | 99.1  | 96.2  | 248500 |
| MANBA    | 119.9 | 99.7  | 97.2  | 248510 |
| MAPT     | 127.2 | 100.0 | 98.6  | 260540 |
| MARS     | 125.2 | 99.7  | 97.3  | 615486 |
| MARS2    | 173.2 | 100.0 | 100.0 | 611390 |
| MARVELD2 | 159.4 | 97.5  | 94.0  | 610153 |
| MASP1    | 148.6 | 100.0 | 99.6  | 257920 |
| MATN3    | 116.6 | 84.7  | 84.7  | 608728 |
| MBOAT7   | 91.8  | 99.3  | 94.7  | 617188 |
| MC2R     | 213.1 | 100.0 | 100.0 | 202200 |
| MCCC1    | 151.7 | 100.0 | 99.4  | 210200 |
| MCCC2    | 131.1 | 99.9  | 98.9  | 210210 |
| MCEE     | 99.8  | 100.0 | 100.0 | 251120 |
| MCFD2    | 101.7 | 99.9  | 98.8  | 613625 |
| MCM4     | 164.3 | 99.9  | 98.8  | 609981 |
| MCM9     | 151.6 | 100.0 | 99.9  | 616185 |
| MCOLN1   | 150.2 | 98.8  | 97.0  | 252650 |
| MCPH1    | 148.6 | 99.9  | 98.1  | 251200 |
| MDH2     | 123.3 | 98.0  | 97.9  | 617339 |
| MECR     | 108.1 | 98.8  | 96.1  | 617282 |
| MED17    | 118.0 | 95.2  | 91.7  | 613668 |
| MED23    | 131.2 | 98.7  | 96.9  | 614249 |
| MED25    | 103.9 | 99.1  | 95.7  | 605589 |
| MEFV     | 108.8 | 94.9  | 91.0  | 249100 |
| MEGF10   | 154.3 | 100.0 | 99.8  | 614399 |
| MEGF8    | 127.6 | 99.9  | 98.6  | 614976 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| MEOX1   | 76.8  | 96.6  | 91.2  | 214300 |
| MERTK   | 161.4 | 99.4  | 97.7  | 613862 |
| MESP2   | 81.5  | 93.1  | 87.9  | 608681 |
| METTL23 | 145.0 | 100.0 | 100.0 | 615942 |
| MFF     | 93.7  | 90.4  | 87.6  | 617086 |
| MFN2    | 150.6 | 100.0 | 99.9  | 617087 |
| MFRP    | 121.3 | 100.0 | 100.0 | 611040 |
| MFSD2A  | 115.1 | 98.8  | 95.9  | 616486 |
| MFSD8   | 125.1 | 99.9  | 98.4  | 610951 |
| MGAT2   | 157.2 | 100.0 | 99.9  | 212066 |
| MGME1   | 151.1 | 100.0 | 100.0 | 615084 |
| MGP     | 132.0 | 92.7  | 91.6  | 245150 |
| MICU1   | 134.2 | 96.0  | 88.8  | 615673 |
| MKKS    | 208.5 | 83.2  | 83.1  | 605231 |
| MKS1    | 114.5 | 99.9  | 98.5  | 615990 |
| MLC1    | 103.4 | 100.0 | 99.8  | 604004 |
| MLH1    | 162.0 | 100.0 | 99.7  | 276300 |
| MLYCD   | 75.6  | 91.3  | 86.9  | 248360 |
| MMAA    | 183.2 | 100.0 | 99.6  | 251100 |
| MMAB    | 101.2 | 100.0 | 99.9  | 251110 |
| MMACHC  | 205.8 | 100.0 | 100.0 | 277400 |
| MMADHC  | 77.0  | 89.3  | 75.0  | 277410 |
| MME     | 101.1 | 98.2  | 93.6  | 617017 |
| MMP13   | 124.1 | 93.5  | 91.5  | 250400 |
| MMP2    | 164.4 | 100.0 | 100.0 | 259600 |
| MMP20   | 100.5 | 100.0 | 98.6  | 612529 |
| MMP21   | 93.3  | 90.2  | 84.6  | 616749 |
| MMP9    | 125.4 | 96.2  | 91.8  | 613073 |
| MOCOS   | 169.0 | 99.1  | 96.6  | 603592 |
| MOCS1   | 87.4  | 98.4  | 93.0  | 252150 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| MOCS2  | 139.5 | 99.6  | 99.6  | 252150 |
| MOGS   | 121.6 | 99.8  | 99.1  | 606056 |
| MPC1   | 121.8 | 100.0 | 99.5  | 614741 |
| MPDU1  | 111.8 | 100.0 | 99.7  | 609180 |
| MPDZ   | 149.0 | 98.7  | 96.6  | 615219 |
| MPI    | 146.2 | 100.0 | 100.0 | 602579 |
| MPL    | 136.7 | 99.6  | 97.5  | 604498 |
| MPLKIP | 72.5  | 97.1  | 79.3  | 234050 |
| MPO    | 155.0 | 100.0 | 99.9  | 254600 |
| MPV17  | 108.5 | 100.0 | 99.4  | 256810 |
| MRAP   | 161.3 | 100.0 | 100.0 | 607398 |
| MRE11  | 51.2  | 95.3  | 82.3  | 604391 |
| MRPL3  | 66.3  | 91.2  | 77.9  | 614582 |
| MRPS16 | 161.1 | 100.0 | 99.1  | 610498 |
| MRPS2  | 166.4 | 99.7  | 97.9  | 617950 |
| MRPS22 | 138.8 | 95.3  | 91.8  | 611719 |
| MRPS34 | 132.7 | 99.9  | 98.3  | 617664 |
| MS4A1  | 123.7 | 99.4  | 96.2  | 613495 |
| MSH2   | 113.4 | 98.6  | 93.1  | 276300 |
| MSH6   | 171.1 | 100.0 | 99.5  | 276300 |
| MSMO1  | 45.8  | 92.6  | 78.5  | 616834 |
| MSRB3  | 155.6 | 99.7  | 98.5  | 613718 |
| MTFMT  | 124.6 | 99.3  | 96.2  | 614947 |
| MTHFR  | 126.1 | 98.4  | 97.2  | 236250 |
| MTMR2  | 106.6 | 100.0 | 99.2  | 601382 |
| MTO1   | 173.7 | 89.5  | 87.3  | 614702 |
| MTPAP  | 109.6 | 98.9  | 93.5  | 613672 |
| MTR    | 140.9 | 99.8  | 98.8  | 250940 |
| MTRR   | 139.1 | 100.0 | 99.2  | 236270 |
| MTTP   | 132.4 | 99.9  | 98.8  | 200100 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| MUSK   | 159.4 | 100.0 | 99.9  | 608931 |
| MUT    | 121.8 | 99.2  | 95.1  | 251000 |
| MUTYH  | 165.0 | 100.0 | 99.9  | 608456 |
| MVK    | 124.3 | 92.1  | 90.4  | 260920 |
| MYBPC1 | 150.7 | 99.9  | 99.4  | 614915 |
| MYD88  | 186.5 | 100.0 | 99.9  | 612260 |
| MYH2   | 129.4 | 99.9  | 98.8  | 605637 |
| MYL3   | 103.1 | 100.0 | 100.0 | 608751 |
| MYMK   | 141.0 | 100.0 | 100.0 | 254940 |
| MYO15A | 116.5 | 97.3  | 94.0  | 600316 |
| MYO18B | 132.4 | 100.0 | 99.1  | 616549 |
| MYO1E  | 131.9 | 98.6  | 97.0  | 614131 |
| MYO3A  | 119.8 | 98.5  | 93.0  | 607101 |
| MYO5A  | 125.3 | 99.5  | 97.4  | 214450 |
| MYO5B  | 137.6 | 98.2  | 95.5  | 251850 |
| MYO6   | 89.7  | 98.1  | 92.3  | 607821 |
| MYO7A  | 134.1 | 99.7  | 98.1  | 600060 |
| MYPN   | 142.4 | 99.3  | 98.4  | 617336 |
| NAGA   | 139.4 | 100.0 | 100.0 | 609242 |
| NAGLU  | 108.7 | 92.4  | 90.4  | 252920 |
| NAGS   | 81.0  | 98.0  | 91.6  | 237310 |
| NALCN  | 139.5 | 99.8  | 97.5  | 615419 |
| NANS   | 106.1 | 100.0 | 99.9  | 610442 |
| NARS2  | 120.0 | 97.4  | 97.1  | 616239 |
| NBAS   | 145.3 | 99.5  | 97.6  | 614800 |
| NBEAL2 | 172.7 | 99.5  | 99.3  | 139090 |
| NBN    | 80.6  | 99.1  | 94.6  | 609135 |
| NCF1   | 23.9  | 25.8  | 22.1  | 233700 |
| NCF2   | 124.3 | 100.0 | 99.4  | 233710 |
| NCF4   | 158.7 | 100.0 | 100.0 | 613960 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| NDE1    | 100.9 | 100.0 | 99.5  | 614019 |
| NDRG1   | 128.4 | 99.9  | 98.8  | 601455 |
| NDST1   | 201.4 | 100.0 | 100.0 | 616116 |
| NDUFA11 | 86.9  | 99.5  | 95.8  | 252010 |
| NDUFA12 | 160.2 | 100.0 | 100.0 | 256000 |
| NDUFA2  | 133.9 | 100.0 | 100.0 | 256000 |
| NDUFA9  | 124.7 | 98.6  | 93.2  | 256000 |
| NDUFAF1 | 115.6 | 100.0 | 100.0 | 252010 |
| NDUFAF2 | 58.6  | 85.7  | 70.9  | 256000 |
| NDUFAF3 | 120.8 | 100.0 | 100.0 | 252010 |
| NDUFAF4 | 79.4  | 98.9  | 91.8  | 252010 |
| NDUFAF5 | 95.7  | 98.8  | 94.5  | 252010 |
| NDUFAF6 | 79.3  | 97.1  | 85.6  | 256000 |
| NDUFB11 | 109.6 | 94.4  | 88.0  | 252010 |
| NDUFB3  | 22.6  | 91.9  | 59.2  | 252010 |
| NDUFS1  | 132.2 | 99.8  | 98.6  | 252010 |
| NDUFS2  | 117.8 | 100.0 | 100.0 | 252010 |
| NDUFS3  | 142.4 | 90.7  | 90.6  | 256000 |
| NDUFS4  | 147.3 | 100.0 | 99.1  | 256000 |
| NDUFS6  | 119.1 | 99.9  | 99.4  | 252010 |
| NDUFS7  | 118.4 | 100.0 | 99.7  | 256000 |
| NDUFS8  | 141.4 | 100.0 | 99.9  | 256000 |
| NDUFV1  | 136.7 | 99.7  | 97.8  | 252010 |
| NDUFV2  | 69.5  | 78.7  | 53.9  | 252010 |
| NEB     | 124.0 | 82.9  | 81.9  | 256030 |
| NECAP1  | 116.9 | 100.0 | 99.9  | 615833 |
| NECTIN1 | 145.4 | 100.0 | 100.0 | 225060 |
| NECTIN4 | 135.8 | 100.0 | 100.0 | 613573 |
| NEK1    | 103.2 | 98.1  | 93.0  | 263520 |
| NEK8    | 171.4 | 100.0 | 99.9  | 615415 |



|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| NEK9    | 136.8 | 99.7  | 98.5  | 617022 |
| NEU1    | 148.1 | 99.4  | 97.1  | 256550 |
| NEUROG3 | 119.4 | 100.0 | 99.3  | 610370 |
| NFU1    | 47.7  | 94.9  | 77.2  | 605711 |
| NGF     | 257.6 | 100.0 | 100.0 | 608654 |
| NGLY1   | 128.0 | 100.0 | 99.5  | 615273 |
| NHEJ1   | 80.3  | 100.0 | 99.1  | 611291 |
| NHLRC1  | 174.2 | 100.0 | 100.0 | 254780 |
| NHP2    | 111.0 | 100.0 | 100.0 | 613987 |
| NIN     | 143.5 | 99.7  | 98.6  | 614851 |
| NIPAL4  | 157.8 | 99.4  | 93.2  | 612281 |
| NKX2-6  | 104.4 | 100.0 | 99.7  | 217095 |
| NKX3-2  | 55.8  | 92.4  | 73.9  | 613330 |
| NLRP2   | 119.0 | 100.0 | 99.8  | 1      |
| NLRP7   | 135.9 | 99.8  | 98.7  | 231090 |
| NME8    | 105.6 | 97.5  | 91.0  | 610852 |
| NMNAT1  | 137.9 | 100.0 | 99.7  | 608553 |
| NNT     | 136.9 | 98.6  | 97.1  | 614736 |
| NOP10   | 160.5 | 100.0 | 100.0 | 224230 |
| NPC1    | 147.9 | 99.2  | 97.8  | 257220 |
| NPC2    | 140.7 | 100.0 | 99.9  | 607625 |
| NPHP1   | 117.6 | 98.8  | 96.4  | 609583 |
| NPHP3   | 115.6 | 99.4  | 96.1  | 267010 |
| NPHP4   | 136.7 | 99.9  | 99.3  | 606966 |
| NPHS1   | 102.0 | 99.9  | 98.9  | 256300 |
| NPHS2   | 116.9 | 99.8  | 95.9  | 600995 |
| NPPA    | 115.4 | 100.0 | 100.0 | 615745 |
| NPR2    | 164.8 | 100.0 | 100.0 | 602875 |
| NR0B2   | 96.8  | 100.0 | 99.8  | 601665 |
| NR1H4   | 141.9 | 96.6  | 92.2  | 617049 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| NR2E3  | 93.4  | 99.9  | 98.9  | 268100 |
| NRXN1  | 160.9 | 96.8  | 95.7  | 614325 |
| NSUN2  | 114.7 | 95.3  | 92.2  | 611091 |
| NT5C2  | 125.3 | 97.1  | 92.7  | 613162 |
| NT5C3A | 62.0  | 89.3  | 78.8  | 266120 |
| NT5E   | 166.3 | 100.0 | 99.8  | 211800 |
| NTHL1  | 98.1  | 99.1  | 95.7  | 616415 |
| NTRK1  | 130.6 | 99.7  | 97.7  | 256800 |
| NUBPL  | 89.8  | 92.9  | 85.9  | 252010 |
| NUP107 | 122.9 | 99.2  | 94.1  | 616730 |
| NUP62  | 111.6 | 100.0 | 99.9  | 271930 |
| NUP93  | 140.7 | 97.9  | 94.9  | 616892 |
| OAT    | 89.2  | 77.7  | 70.5  | 258870 |
| OBSL1  | 140.5 | 99.8  | 98.5  | 612921 |
| OCA2   | 139.9 | 99.5  | 97.9  | 203200 |
| OCLN   | 220.7 | 100.0 | 100.0 | 251290 |
| OGDH   | 201.3 | 100.0 | 100.0 | 203740 |
| OPA3   | 128.0 | 99.5  | 97.4  | 258501 |
| OPLAH  | 109.4 | 99.4  | 97.9  | 260005 |
| ORAI1  | 237.3 | 93.8  | 89.8  | 612782 |
| ORC1   | 106.7 | 99.9  | 98.9  | 224690 |
| ORC4   | 57.6  | 95.8  | 82.0  | 613800 |
| ORC6   | 126.8 | 100.0 | 100.0 | 613803 |
| OSGEP  | 120.5 | 100.0 | 99.6  | 617729 |
| OSTM1  | 80.7  | 90.8  | 88.4  | 259720 |
| OTOA   | 117.3 | 99.0  | 96.6  | 607039 |
| OTOF   | 131.2 | 100.0 | 99.7  | 601071 |
| OTOG   | 145.1 | 99.4  | 98.2  | 614945 |
| OTOGL  | 113.3 | 98.4  | 93.9  | 614944 |
| OTUD6B | 123.4 | 99.9  | 98.2  | 617452 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| OTULIN | 149.5 | 90.5  | 86.3  | 617099 |
| OXCT1  | 121.4 | 99.6  | 97.8  | 245050 |
| P2RY12 | 186.2 | 100.0 | 100.0 | 609821 |
| P3H1   | 137.0 | 100.0 | 99.9  | 610915 |
| P3H2   | 100.2 | 99.2  | 93.4  | 614292 |
| PAH    | 151.7 | 100.0 | 100.0 | 261600 |
| PAM16  | 50.7  | 65.2  | 64.7  | 613320 |
| PANK2  | 146.6 | 99.3  | 93.1  | 607236 |
| PAPSS2 | 108.5 | 99.7  | 98.5  | 612847 |
| PARK7  | 86.9  | 100.0 | 99.0  | 606324 |
| PARN   | 128.4 | 99.9  | 98.0  | 616353 |
| PATL2  | 107.8 | 99.9  | 99.2  | 614661 |
| PAX1   | 132.4 | 87.7  | 82.4  | 615560 |
| PC     | 149.3 | 97.7  | 94.6  | 266150 |
| PCBD1  | 113.3 | 99.5  | 99.1  | 264070 |
| PCCA   | 103.1 | 96.4  | 89.2  | 606054 |
| PCCB   | 129.8 | 98.7  | 96.4  | 606054 |
| PCDH15 | 153.9 | 99.0  | 98.0  | 609533 |
| PCK1   | 143.0 | 100.0 | 100.0 | 261680 |
| PCK2   | 194.5 | 100.0 | 99.8  | 261650 |
| PCLO   | 165.2 | 99.7  | 98.5  | 608027 |
| PCNT   | 117.6 | 98.9  | 96.0  | 210720 |
| PCSK1  | 147.2 | 100.0 | 99.0  | 600955 |
| PCYT1A | 113.5 | 98.3  | 94.7  | 608940 |
| PDE10A | 119.8 | 81.2  | 80.8  | 616921 |
| PDE6A  | 125.8 | 100.0 | 99.8  | 613810 |
| PDE6B  | 147.9 | 100.0 | 100.0 | 613801 |
| PDE6C  | 137.0 | 99.0  | 96.7  | 613093 |
| PDE6G  | 95.3  | 99.5  | 96.3  | 613582 |
| PDE6H  | 68.4  | 97.6  | 77.0  | 610024 |

|        |       |       |       |        |
|--------|-------|-------|-------|--------|
| PDHB   | 133.0 | 99.3  | 96.8  | 614111 |
| PDHX   | 132.5 | 98.9  | 94.6  | 245349 |
| PDP1   | 209.6 | 100.0 | 100.0 | 608782 |
| PDSS1  | 116.7 | 88.8  | 78.7  | 614651 |
| PDSS2  | 126.8 | 96.5  | 93.5  | 614652 |
| PDX1   | 35.4  | 89.0  | 72.1  | 260370 |
| PDZD7  | 80.9  | 98.4  | 93.9  | 618003 |
| PEPD   | 116.0 | 99.6  | 98.5  | 170100 |
| PET100 | 94.5  | 88.8  | 74.8  | 220110 |
| PEX1   | 115.8 | 97.7  | 95.4  | 214100 |
| PEX10  | 111.8 | 96.1  | 90.1  | 614870 |
| PEX11B | 105.7 | 99.7  | 98.3  | 614920 |
| PEX12  | 168.3 | 100.0 | 100.0 | 614859 |
| PEX13  | 197.6 | 99.8  | 98.7  | 614883 |
| PEX14  | 149.0 | 99.7  | 97.5  | 614887 |
| PEX16  | 137.0 | 97.1  | 93.1  | 614876 |
| PEX19  | 92.9  | 99.9  | 99.2  | 614886 |
| PEX2   | 147.1 | 100.0 | 100.0 | 614866 |
| PEX26  | 76.4  | 100.0 | 99.8  | 614872 |
| PEX3   | 98.1  | 99.1  | 94.3  | 614882 |
| PEX5   | 111.7 | 99.9  | 98.3  | 214110 |
| PEX6   | 94.5  | 90.4  | 86.1  | 614862 |
| PEX7   | 113.5 | 89.6  | 82.0  | 614879 |
| PFKM   | 150.4 | 100.0 | 99.8  | 232800 |
| PGAM2  | 170.9 | 100.0 | 99.9  | 261670 |
| PGAP1  | 98.1  | 94.9  | 88.6  | 615802 |
| PGAP2  | 158.4 | 100.0 | 100.0 | 614207 |
| PGAP3  | 72.8  | 62.5  | 58.0  | 615716 |
| PGM1   | 133.6 | 100.0 | 99.9  | 614921 |
| PGM3   | 191.4 | 99.9  | 99.7  | 615816 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| PHGDH   | 115.6 | 100.0 | 99.8  | 601815 |
| PHKB    | 130.4 | 99.8  | 97.5  | 261750 |
| PHKG2   | 159.1 | 100.0 | 100.0 | 613027 |
| PHOX2A  | 29.9  | 59.9  | 32.6  | 602078 |
| PHYH    | 74.6  | 97.5  | 90.8  | 266500 |
| PI4KA   | 112.8 | 93.6  | 89.4  | 616531 |
| PIEZO2  | 126.1 | 99.9  | 99.2  | 617146 |
| PIGC    | 129.0 | 99.7  | 96.4  | 617816 |
| PIGG    | 167.4 | 100.0 | 99.7  | 616917 |
| PIGL    | 121.8 | 99.9  | 99.3  | 280000 |
| PIGM    | 165.4 | 100.0 | 100.0 | 610293 |
| PIGN    | 111.3 | 92.6  | 87.1  | 614080 |
| PIGO    | 147.0 | 100.0 | 99.9  | 614749 |
| PIGT    | 171.3 | 98.1  | 98.0  | 615398 |
| PIGV    | 145.5 | 100.0 | 100.0 | 239300 |
| PIGW    | 147.6 | 100.0 | 99.8  | 616025 |
| PIGY    | 121.4 | 100.0 | 99.9  | 616809 |
| PIK3R1  | 129.3 | 99.7  | 97.3  | 615214 |
| PIK3R5  | 110.1 | 100.0 | 99.8  | 615217 |
| PINK1   | 90.3  | 87.2  | 81.1  | 605909 |
| PIP5K1C | 107.6 | 96.3  | 95.1  | 611369 |
| PKHD1   | 154.9 | 100.0 | 99.7  | 263200 |
| PKLR    | 178.8 | 100.0 | 100.0 | 266200 |
| PKP1    | 122.0 | 99.9  | 98.5  | 604536 |
| PLA2G6  | 117.5 | 99.9  | 98.4  | 256600 |
| PLA2G7  | 125.6 | 99.9  | 97.2  | 614278 |
| PLCB1   | 142.8 | 100.0 | 99.7  | 613722 |
| PLCD1   | 116.9 | 99.5  | 97.1  | 151600 |
| PLCE1   | 155.3 | 99.5  | 98.9  | 610725 |
| PLEC    | 114.1 | 99.7  | 98.7  | 612138 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| PLEKHG2 | 131.7 | 99.8  | 97.9  | 616763 |
| PLEKHG5 | 86.9  | 96.2  | 89.0  | 611067 |
| PLEKHM1 | 141.1 | 100.0 | 99.9  | 611497 |
| PLG     | 115.4 | 87.8  | 87.0  | 217090 |
| PLK4    | 145.5 | 99.5  | 96.3  | 616171 |
| PLOD1   | 137.9 | 99.8  | 97.5  | 225400 |
| PLOD2   | 108.6 | 94.7  | 88.6  | 609220 |
| PLOD3   | 100.1 | 99.0  | 96.3  | 612394 |
| PMM2    | 141.1 | 99.9  | 99.4  | 212065 |
| PMPCA   | 120.8 | 99.4  | 96.8  | 213200 |
| PMPCB   | 121.0 | 99.7  | 97.8  | 617954 |
| PMS2    | 95.1  | 83.5  | 80.7  | 276300 |
| PNKP    | 93.0  | 99.8  | 97.7  | 616267 |
| PNLIP   | 160.5 | 99.5  | 95.6  | 614338 |
| PNP     | 151.4 | 100.0 | 99.5  | 613179 |
| PNPLA1  | 192.6 | 100.0 | 100.0 | 615024 |
| PNPLA2  | 113.2 | 99.7  | 97.4  | 610717 |
| PNPLA6  | 122.1 | 99.7  | 98.5  | 612020 |
| PNPO    | 66.4  | 100.0 | 98.3  | 610090 |
| PNPT1   | 53.7  | 93.3  | 80.9  | 614932 |
| POC1A   | 133.8 | 100.0 | 100.0 | 614813 |
| POC1B   | 78.7  | 98.0  | 94.2  | 615973 |
| POLG    | 114.4 | 100.0 | 99.5  | 203700 |
| POLH    | 140.7 | 100.0 | 99.8  | 278750 |
| POLR1C  | 117.0 | 99.7  | 96.1  | 616494 |
| POLR3A  | 137.4 | 100.0 | 99.9  | 607694 |
| POLR3B  | 146.4 | 99.9  | 98.5  | 614381 |
| POMC    | 116.2 | 100.0 | 100.0 | 609734 |
| POMGNT1 | 127.6 | 99.7  | 97.1  | 253280 |
| POMGNT2 | 259.6 | 100.0 | 100.0 | 614830 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| POMK     | 205.1 | 100.0 | 100.0 | 615249 |
| POMP     | 114.4 | 95.2  | 87.5  | 601952 |
| POMT1    | 155.7 | 99.7  | 98.1  | 236670 |
| POMT2    | 111.1 | 98.9  | 97.5  | 613150 |
| POR      | 167.7 | 99.9  | 98.7  | 201750 |
| POU1F1   | 106.3 | 98.2  | 94.7  | 613038 |
| PPIB     | 118.4 | 100.0 | 100.0 | 259440 |
| PPP1R15B | 133.4 | 99.4  | 98.0  | 616817 |
| PPT1     | 144.5 | 90.0  | 87.3  | 256730 |
| PRCD     | 89.4  | 100.0 | 99.9  | 610599 |
| PRDM12   | 112.2 | 91.0  | 87.7  | 616488 |
| PRDM5    | 129.4 | 99.5  | 95.5  | 614170 |
| PRF1     | 122.5 | 91.2  | 90.8  | 603553 |
| PRG4     | 144.6 | 97.6  | 88.4  | 208250 |
| PRICKLE1 | 117.3 | 100.0 | 100.0 | 612437 |
| PRKCD    | 181.2 | 100.0 | 99.9  | 615559 |
| PRKDC    | 106.7 | 98.4  | 94.8  | 615966 |
| PRKN     | 98.6  | 79.6  | 78.8  | 600116 |
| PRKRA    | 179.6 | 99.8  | 98.4  | 612067 |
| PRMT7    | 138.7 | 100.0 | 99.8  | 617157 |
| PROC     | 138.5 | 99.7  | 97.2  | 612304 |
| PRODH    | 83.8  | 84.9  | 82.3  | 239500 |
| PROM1    | 112.3 | 95.4  | 92.8  | 612095 |
| PROP1    | 76.5  | 91.6  | 84.3  | 262600 |
| PROS1    | 101.4 | 96.8  | 91.4  | 614514 |
| PRSS12   | 153.3 | 99.9  | 98.5  | 249500 |
| PRSS56   | 51.5  | 96.6  | 83.8  | 613517 |
| PRX      | 115.6 | 99.8  | 98.3  | 614895 |
| PSAP     | 114.4 | 99.9  | 99.0  | 611721 |
| PSAT1    | 53.2  | 91.4  | 75.8  | 616038 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| PSMB8    | 118.7 | 100.0 | 99.8  | 256040 |
| PSMC3IP  | 113.4 | 99.9  | 99.7  | 614324 |
| PSPH     | 128.9 | 98.8  | 95.4  | 614023 |
| PTF1A    | 74.0  | 88.4  | 78.1  | 615935 |
| PTH1R    | 108.5 | 99.9  | 98.8  | 215045 |
| PTPN14   | 175.7 | 99.4  | 96.4  | 613611 |
| PTPRC    | 101.6 | 93.9  | 86.3  | 608971 |
| PTPRO    | 140.8 | 99.9  | 99.0  | 614196 |
| PTPRQ    | 104.7 | 93.3  | 89.1  | 613391 |
| PTRH2    | 279.6 | 100.0 | 100.0 | 616263 |
| PTS      | 107.2 | 99.6  | 94.1  | 261640 |
| PUS1     | 127.2 | 98.6  | 93.9  | 600462 |
| PUS3     | 192.0 | 100.0 | 100.0 | 617051 |
| PUS7     | 136.5 | 99.8  | 98.0  | 1      |
| PXDN     | 163.8 | 99.8  | 98.5  | 269400 |
| PYCR1    | 86.3  | 99.4  | 94.3  | 612940 |
| PYCR2    | 127.6 | 100.0 | 97.6  | 616420 |
| PYGL     | 158.6 | 100.0 | 100.0 | 232700 |
| PYGM     | 127.1 | 100.0 | 99.9  | 232600 |
| QARS     | 166.6 | 100.0 | 100.0 | 615760 |
| QDPR     | 92.3  | 100.0 | 99.5  | 261630 |
| RAB18    | 82.7  | 97.1  | 86.4  | 614222 |
| RAB23    | 110.3 | 99.7  | 98.0  | 201000 |
| RAB27A   | 143.9 | 100.0 | 99.9  | 607624 |
| RAB28    | 52.1  | 96.5  | 87.1  | 615374 |
| RAB33B   | 233.9 | 100.0 | 100.0 | 615222 |
| RAB3GAP1 | 124.2 | 99.4  | 98.8  | 600118 |
| RAB3GAP2 | 94.1  | 98.4  | 93.9  | 212720 |
| RAD50    | 99.0  | 92.6  | 86.2  | 613078 |
| RAD51C   | 143.4 | 100.0 | 98.9  | 613390 |



|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| RAG1    | 206.9 | 100.0 | 100.0 | 601457 |
| RAG2    | 221.0 | 100.0 | 100.0 | 233650 |
| RAPSN   | 140.5 | 99.6  | 96.3  | 208150 |
| RARB    | 118.7 | 100.0 | 100.0 | 615524 |
| RARS    | 86.4  | 92.7  | 85.9  | 616140 |
| RARS2   | 107.2 | 100.0 | 99.1  | 611523 |
| RAX     | 82.5  | 88.7  | 77.3  | 611038 |
| RBBP8   | 110.7 | 99.6  | 96.4  | 251255 |
| RBCK1   | 104.1 | 99.2  | 94.9  | 615895 |
| RBM28   | 138.7 | 100.0 | 100.0 | 612079 |
| RBM8A   | 106.6 | 100.0 | 99.4  | 274000 |
| RBP4    | 99.6  | 99.4  | 96.1  | 615147 |
| RCBTB1  | 123.7 | 100.0 | 99.7  | 617175 |
| RD3     | 161.6 | 100.0 | 99.9  | 610612 |
| RDH12   | 94.4  | 100.0 | 98.4  | 612712 |
| RDH5    | 160.2 | 100.0 | 99.7  | 136880 |
| RDX     | 43.2  | 84.7  | 64.8  | 611022 |
| RECQL4  | 149.6 | 99.2  | 96.5  | 218600 |
| RELN    | 155.6 | 100.0 | 99.8  | 257320 |
| REN     | 148.9 | 100.0 | 100.0 | 267430 |
| RETREG1 | 126.1 | 95.6  | 90.1  | 613115 |
| RFT1    | 108.3 | 99.8  | 97.3  | 612015 |
| RFX5    | 116.9 | 98.7  | 96.3  | 209920 |
| RFX6    | 153.9 | 100.0 | 99.6  | 615710 |
| RFXANK  | 105.9 | 100.0 | 100.0 | 209920 |
| RFXAP   | 84.8  | 94.4  | 91.6  | 209920 |
| RGR     | 126.8 | 100.0 | 99.4  | 613769 |
| RHO     | 210.1 | 100.0 | 100.0 | 610445 |
| RIN2    | 113.4 | 100.0 | 99.9  | 613075 |
| RIPK4   | 163.3 | 100.0 | 99.6  | 263650 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| RLBP1    | 144.8 | 100.0 | 100.0 | 607475 |
| RMND1    | 137.2 | 99.8  | 97.3  | 614922 |
| RMRP     |       |       |       | 607095 |
| RNASEH1  | 98.6  | 99.1  | 95.6  | 616479 |
| RNASEH2A | 142.1 | 100.0 | 99.9  | 610333 |
| RNASEH2B | 103.8 | 93.2  | 87.5  | 610181 |
| RNASEH2C | 209.2 | 100.0 | 99.9  | 610329 |
| RNASET2  | 96.4  | 91.9  | 88.3  | 612951 |
| RNF168   | 215.3 | 100.0 | 99.1  | 611943 |
| RNF216   | 137.1 | 99.8  | 98.6  | 212840 |
| ROBO3    | 99.7  | 98.7  | 95.6  | 607313 |
| ROGDI    | 112.2 | 97.9  | 95.3  | 226750 |
| ROR2     | 165.9 | 99.4  | 98.0  | 268310 |
| RORC     | 132.3 | 100.0 | 100.0 | 616622 |
| RP1      | 121.8 | 91.4  | 90.3  | 180100 |
| RPE65    | 130.3 | 100.0 | 99.3  | 204100 |
| RPGRIP1  | 154.2 | 100.0 | 99.9  | 608194 |
| RPGRIP1L | 126.2 | 96.4  | 93.9  | 216360 |
| RPIA     | 113.1 | 94.3  | 90.9  | 608611 |
| RRM2B    | 128.6 | 99.7  | 97.5  | 612075 |
| RSPH1    | 146.1 | 100.0 | 100.0 | 615481 |
| RSPH3    | 132.5 | 99.7  | 97.5  | 616481 |
| RSPH4A   | 139.0 | 98.3  | 96.5  | 612649 |
| RSPH9    | 127.4 | 100.0 | 99.6  | 612650 |
| RSPO1    | 109.7 | 100.0 | 100.0 | 610644 |
| RSPO4    | 107.2 | 100.0 | 100.0 | 206800 |
| RSPRY1   | 168.9 | 100.0 | 99.9  | 616723 |
| RTEL1    | 110.9 | 99.2  | 95.1  | 615190 |
| RTN4IP1  | 98.1  | 99.9  | 99.1  | 616732 |
| RTTN     | 129.5 | 97.2  | 94.7  | 614833 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| RUBCN   | 104.1 | 98.0  | 97.5  | 615705 |
| RUSC2   | 182.3 | 100.0 | 99.9  | 617773 |
| RYR1    | 120.7 | 96.8  | 93.7  | 255320 |
| S1PR2   | 278.0 | 97.4  | 92.7  | 610419 |
| SACS    | 154.5 | 100.0 | 99.7  | 270550 |
| SAG     | 131.3 | 100.0 | 99.9  | 258100 |
| SAMD9   | 159.1 | 99.9  | 99.3  | 610455 |
| SAMHD1  | 127.9 | 99.6  | 96.6  | 612952 |
| SAR1B   | 125.0 | 89.8  | 88.9  | 246700 |
| SARS2   | 104.8 | 94.8  | 92.7  | 613845 |
| SBDS    | 212.3 | 100.0 | 99.9  | 260400 |
| SBF1    | 107.9 | 98.5  | 96.5  | 615284 |
| SBF2    | 117.0 | 99.6  | 96.8  | 604563 |
| SC5D    | 198.4 | 100.0 | 99.2  | 607330 |
| SCAPER  | 135.9 | 96.0  | 93.6  | 1      |
| SCARB2  | 121.2 | 100.0 | 99.9  | 254900 |
| SCARF2  | 82.5  | 85.2  | 73.6  | 600920 |
| SCN1B   | 168.3 | 97.1  | 96.1  | 617350 |
| SCN4A   | 214.0 | 99.9  | 99.5  | 614198 |
| SCN9A   | 146.5 | 98.5  | 97.0  | 243000 |
| SCNN1A  | 134.3 | 99.0  | 96.3  | 264350 |
| SCNN1B  | 148.9 | 100.0 | 99.8  | 264350 |
| SCNN1G  | 139.4 | 99.7  | 97.1  | 264350 |
| SCO1    | 109.6 | 97.9  | 94.3  | 220110 |
| SCO2    | 113.1 | 100.0 | 100.0 | 604377 |
| SCP2    | 106.9 | 99.6  | 96.5  | 613724 |
| SCYL1   | 143.2 | 98.6  | 96.3  | 616719 |
| SDCCAG8 | 123.9 | 99.8  | 97.4  | 615993 |
| SDHA    | 122.2 | 84.8  | 80.8  | 252011 |
| SDHAF1  | 42.5  | 100.0 | 96.2  | 252011 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| SEC23A   | 121.8 | 98.0  | 94.6  | 607812 |
| SEC23B   | 161.1 | 97.5  | 96.4  | 224100 |
| SEC24D   | 136.9 | 99.9  | 98.6  | 616294 |
| SECISBP2 | 122.5 | 98.3  | 95.3  | 609698 |
| SELENON  | 111.7 | 85.2  | 83.3  | 602771 |
| SEPSECS  | 159.3 | 100.0 | 100.0 | 613811 |
| SERAC1   | 112.5 | 98.8  | 94.6  | 614739 |
| SERPINA1 | 141.1 | 100.0 | 99.9  | 613490 |
| SERPINA6 | 190.9 | 100.0 | 100.0 | 611489 |
| SERPINB6 | 164.1 | 95.9  | 95.9  | 613453 |
| SERPINB7 | 127.4 | 100.0 | 99.5  | 615598 |
| SERPINC1 | 143.1 | 100.0 | 100.0 | 613118 |
| SERPINE1 | 155.0 | 100.0 | 100.0 | 613329 |
| SERPINF1 | 101.8 | 100.0 | 99.4  | 613982 |
| SERPINF2 | 143.8 | 99.9  | 99.3  | 262850 |
| SERPING1 | 97.9  | 97.3  | 92.6  | 106100 |
| SETX     | 163.2 | 99.9  | 99.1  | 606002 |
| SFRP4    | 164.1 | 100.0 | 98.5  | 265900 |
| SFTPFB   | 99.4  | 99.9  | 98.7  | 265120 |
| SFXN4    | 131.7 | 100.0 | 99.1  | 615578 |
| SGCA     | 147.3 | 100.0 | 99.7  | 608099 |
| SGCB     | 154.2 | 96.6  | 94.2  | 604286 |
| SGCD     | 94.8  | 100.0 | 99.4  | 601287 |
| SGCG     | 138.7 | 100.0 | 100.0 | 253700 |
| SGO1     | 94.8  | 98.0  | 94.3  | 616201 |
| SGSH     | 129.0 | 95.1  | 93.6  | 252900 |
| SH3PXD2B | 140.2 | 100.0 | 99.8  | 249420 |
| SH3TC2   | 121.3 | 100.0 | 99.7  | 601596 |
| SI       | 98.1  | 96.2  | 87.1  | 222900 |
| SIL1     | 154.4 | 99.8  | 98.0  | 248800 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| SIX6     | 228.6 | 100.0 | 100.0 | 212550 |
| SKIV2L   | 149.1 | 100.0 | 99.8  | 614602 |
| SLC10A2  | 151.0 | 100.0 | 100.0 | 613291 |
| SLC11A2  | 135.2 | 100.0 | 99.3  | 206100 |
| SLC12A1  | 172.7 | 99.8  | 99.1  | 601678 |
| SLC12A3  | 139.3 | 100.0 | 100.0 | 263800 |
| SLC12A5  | 125.9 | 85.4  | 81.6  | 616645 |
| SLC12A6  | 141.8 | 100.0 | 99.9  | 218000 |
| SLC13A5  | 164.1 | 100.0 | 100.0 | 615905 |
| SLC17A5  | 119.6 | 96.8  | 92.9  | 604369 |
| SLC19A2  | 119.5 | 99.8  | 97.8  | 249270 |
| SLC19A3  | 186.4 | 100.0 | 99.9  | 607483 |
| SLC1A1   | 174.2 | 100.0 | 99.9  | 222730 |
| SLC1A4   | 156.5 | 98.9  | 94.9  | 616657 |
| SLC22A12 | 105.7 | 100.0 | 99.7  | 220150 |
| SLC22A5  | 153.3 | 100.0 | 100.0 | 212140 |
| SLC24A1  | 218.5 | 100.0 | 100.0 | 613830 |
| SLC24A4  | 126.8 | 99.6  | 97.3  | 615887 |
| SLC24A5  | 114.5 | 99.6  | 97.7  | 113750 |
| SLC25A1  | 71.0  | 92.2  | 87.0  | 615182 |
| SLC25A12 | 150.5 | 99.8  | 98.4  | 612949 |
| SLC25A13 | 110.7 | 95.7  | 92.3  | 603471 |
| SLC25A15 | 192.5 | 98.8  | 95.0  | 238970 |
| SLC25A19 | 88.6  | 99.9  | 98.3  | 607196 |
| SLC25A20 | 110.3 | 100.0 | 99.7  | 212138 |
| SLC25A22 | 108.7 | 99.5  | 96.9  | 609304 |
| SLC25A26 | 98.0  | 98.9  | 96.0  | 616794 |
| SLC25A3  | 139.0 | 99.8  | 97.6  | 610773 |
| SLC25A38 | 111.4 | 99.8  | 98.1  | 205950 |
| SLC25A46 | 205.7 | 95.9  | 87.3  | 616505 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| SLC26A1  | 139.8 | 100.0 | 99.9  | 167030 |
| SLC26A2  | 233.2 | 100.0 | 100.0 | 600972 |
| SLC26A3  | 156.1 | 99.9  | 98.9  | 214700 |
| SLC26A4  | 123.3 | 99.9  | 99.1  | 600791 |
| SLC26A5  | 150.9 | 98.7  | 95.8  | 613865 |
| SLC27A4  | 155.8 | 99.6  | 97.9  | 608649 |
| SLC29A3  | 203.6 | 99.9  | 99.5  | 602782 |
| SLC2A1   | 190.1 | 92.9  | 92.8  | 606777 |
| SLC2A10  | 166.4 | 97.7  | 97.6  | 208050 |
| SLC2A2   | 178.4 | 100.0 | 99.9  | 227810 |
| SLC2A9   | 119.0 | 99.2  | 96.2  | 612076 |
| SLC30A10 | 164.4 | 100.0 | 100.0 | 613280 |
| SLC33A1  | 140.9 | 96.8  | 90.1  | 614482 |
| SLC34A1  | 153.2 | 100.0 | 99.5  | 613388 |
| SLC34A2  | 169.1 | 100.0 | 100.0 | 265100 |
| SLC34A3  | 105.6 | 98.9  | 94.5  | 241530 |
| SLC35A1  | 124.0 | 99.9  | 97.7  | 603585 |
| SLC35C1  | 230.2 | 99.9  | 98.4  | 266265 |
| SLC35D1  | 115.4 | 95.7  | 90.4  | 269250 |
| SLC37A4  | 140.2 | 100.0 | 99.9  | 232220 |
| SLC38A8  | 76.4  | 99.4  | 95.8  | 609218 |
| SLC39A13 | 114.8 | 99.8  | 98.0  | 612350 |
| SLC39A14 | 107.7 | 99.8  | 97.9  | 617013 |
| SLC39A4  | 81.8  | 99.2  | 96.0  | 201100 |
| SLC39A8  | 128.5 | 100.0 | 99.7  | 616721 |
| SLC3A1   | 162.8 | 100.0 | 99.5  | 220100 |
| SLC45A2  | 148.1 | 100.0 | 99.9  | 606574 |
| SLC46A1  | 106.0 | 99.4  | 96.4  | 229050 |
| SLC4A1   | 140.0 | 100.0 | 99.9  | 611590 |
| SLC4A11  | 153.0 | 100.0 | 99.7  | 217400 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| SLC4A4   | 122.3 | 99.0  | 97.1  | 604278 |
| SLC52A2  | 177.6 | 100.0 | 100.0 | 614707 |
| SLC52A3  | 119.6 | 100.0 | 100.0 | 211530 |
| SLC5A1   | 140.0 | 100.0 | 100.0 | 606824 |
| SLC5A2   | 118.7 | 100.0 | 100.0 | 233100 |
| SLC5A5   | 93.9  | 99.7  | 96.8  | 274400 |
| SLC6A17  | 189.8 | 100.0 | 100.0 | 616269 |
| SLC6A19  | 149.1 | 100.0 | 99.3  | 234500 |
| SLC6A3   | 145.7 | 100.0 | 99.8  | 613135 |
| SLC6A5   | 136.5 | 100.0 | 99.7  | 614618 |
| SLC7A14  | 191.9 | 100.0 | 100.0 | 615725 |
| SLC7A7   | 123.9 | 100.0 | 99.9  | 222700 |
| SLC7A9   | 125.5 | 99.9  | 99.0  | 220100 |
| SLC9A3   | 147.1 | 98.7  | 96.9  | 616868 |
| SLCO2A1  | 110.5 | 100.0 | 99.6  | 614441 |
| SLITRK6  | 206.9 | 100.0 | 100.0 | 221200 |
| SLURP1   | 97.1  | 99.8  | 96.2  | 248300 |
| SLX4     | 114.2 | 100.0 | 99.8  | 613951 |
| SMARCAL1 | 134.6 | 100.0 | 99.9  | 242900 |
| SMG9     | 101.8 | 100.0 | 99.9  | 616920 |
| SMN1     | 112.7 | 99.8  | 96.5  | 253300 |
| SMOC1    | 129.8 | 99.5  | 97.3  | 206920 |
| SMOC2    | 91.5  | 75.4  | 72.6  | 125400 |
| SMPD1    | 123.5 | 99.6  | 97.9  | 257200 |
| SNAI2    | 129.8 | 100.0 | 99.8  | 608890 |
| SNAP29   | 153.5 | 100.0 | 100.0 | 609528 |
| SNIP1    | 139.3 | 99.2  | 96.7  | 614501 |
| SNX10    | 118.9 | 96.2  | 96.1  | 615085 |
| SNX14    | 70.1  | 95.2  | 82.9  | 616354 |
| SOBP     | 130.7 | 92.9  | 85.4  | 613671 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| SOD1    | 161.9 | 100.0 | 100.0 | 105400 |
| SOST    | 112.6 | 100.0 | 99.6  | 269500 |
| SOX18   | 21.2  | 62.6  | 48.8  | 607823 |
| SP110   | 121.6 | 100.0 | 99.5  | 235550 |
| SPAG1   | 87.3  | 96.3  | 88.2  | 615505 |
| SPARC   | 161.0 | 100.0 | 100.0 | 616507 |
| SPART   | 132.4 | 99.8  | 98.2  | 275900 |
| SPATA5  | 132.0 | 99.9  | 99.2  | 616577 |
| SPATA7  | 119.6 | 97.8  | 90.8  | 604232 |
| SPEG    | 100.9 | 93.3  | 86.5  | 615959 |
| SPG11   | 129.2 | 99.2  | 96.9  | 616668 |
| SPG21   | 121.4 | 98.6  | 94.8  | 248900 |
| SPG7    | 119.2 | 93.3  | 92.4  | 607259 |
| SPINK5  | 145.0 | 99.4  | 96.5  | 256500 |
| SPINT2  | 71.5  | 97.8  | 84.2  | 270420 |
| SPR     | 166.5 | 98.9  | 90.0  | 612716 |
| SPRTN   | 167.8 | 100.0 | 100.0 | 616200 |
| SPTA1   | 119.4 | 99.8  | 98.9  | 270970 |
| SPTB    | 148.0 | 100.0 | 99.9  | 617948 |
| SPTBN2  | 118.0 | 99.9  | 99.3  | 615386 |
| SRD5A2  | 77.6  | 100.0 | 96.4  | 264600 |
| SRD5A3  | 135.9 | 100.0 | 99.7  | 612379 |
| ST14    | 154.0 | 98.0  | 97.0  | 602400 |
| ST3GAL3 | 144.5 | 100.0 | 99.9  | 611090 |
| ST3GAL5 | 121.9 | 84.4  | 84.2  | 609056 |
| STAC3   | 120.0 | 100.0 | 99.9  | 255995 |
| STAMPB  | 112.3 | 99.3  | 96.5  | 614261 |
| STAR    | 124.0 | 100.0 | 100.0 | 201710 |
| STAT1   | 126.2 | 98.0  | 95.8  | 613796 |
| STAT2   | 116.0 | 100.0 | 99.9  | 616636 |



|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| STAT5B  | 130.6 | 99.7  | 97.2  | 245590 |
| STIL    | 157.2 | 99.8  | 98.6  | 612703 |
| STIM1   | 145.3 | 100.0 | 99.2  | 612783 |
| STK4    | 138.9 | 100.0 | 99.3  | 614868 |
| STRA6   | 116.5 | 100.0 | 99.9  | 601186 |
| STRADA  | 134.1 | 100.0 | 98.9  | 611087 |
| STRC    | 119.0 | 99.9  | 98.4  | 603720 |
| STT3A   | 156.2 | 100.0 | 100.0 | 615596 |
| STT3B   | 125.1 | 99.2  | 96.0  | 615597 |
| STUB1   | 176.1 | 100.0 | 98.9  | 615768 |
| STX11   | 311.4 | 100.0 | 100.0 | 603552 |
| STXBP2  | 102.3 | 88.9  | 83.8  | 613101 |
| SUCLA2  | 64.9  | 93.3  | 82.8  | 612073 |
| SUCLG1  | 101.3 | 99.6  | 95.4  | 245400 |
| SUFU    | 122.6 | 99.9  | 99.0  | 617757 |
| SUMF1   | 103.3 | 98.6  | 91.1  | 272200 |
| SUOX    | 212.6 | 100.0 | 100.0 | 272300 |
| SURF1   | 96.2  | 88.3  | 88.3  | 616684 |
| SYNE1   | 136.6 | 98.2  | 97.6  | 610743 |
| SYNE4   | 73.9  | 98.3  | 91.6  | 615540 |
| SYNJ1   | 127.2 | 99.3  | 96.1  | 615530 |
| SYT14   | 113.5 | 59.9  | 53.8  | 614229 |
| SZT2    | 149.5 | 99.5  | 99.2  | 615476 |
| TAC3    | 80.5  | 99.1  | 91.1  | 614839 |
| TACO1   | 91.7  | 97.0  | 92.6  | 220110 |
| TACR3   | 180.3 | 100.0 | 100.0 | 614840 |
| TACSTD2 | 223.6 | 99.1  | 96.6  | 204870 |
| TAF13   | 81.8  | 100.0 | 99.9  | 617432 |
| TAF2    | 112.8 | 98.8  | 94.7  | 615599 |
| TAF6    | 130.0 | 99.9  | 98.6  | 617126 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| TALDO1  | 130.5 | 100.0 | 99.9  | 606003 |
| TANGO2  | 145.3 | 100.0 | 100.0 | 616878 |
| TAP1    | 103.3 | 100.0 | 99.1  | 604571 |
| TAP2    | 95.2  | 99.6  | 98.6  | 604571 |
| TAPBP   | 100.7 | 96.1  | 94.3  | 604571 |
| TAPT1   | 83.5  | 88.5  | 85.9  | 616897 |
| TAT     | 143.1 | 100.0 | 100.0 | 276600 |
| TBC1D20 | 145.7 | 94.2  | 94.1  | 615663 |
| TBC1D23 | 86.0  | 95.7  | 91.5  | 617695 |
| TBC1D24 | 179.2 | 100.0 | 100.0 | 614617 |
| TBC1D7  | 105.5 | 99.6  | 96.6  | 248000 |
| TBCD    | 152.9 | 95.5  | 92.3  | 617193 |
| TBCE    | 128.0 | 99.9  | 98.2  | 241410 |
| TBCK    | 86.5  | 95.7  | 89.3  | 616900 |
| TBX15   | 131.7 | 100.0 | 99.4  | 260660 |
| TBX19   | 174.4 | 100.0 | 100.0 | 201400 |
| TBXAS1  | 140.3 | 100.0 | 100.0 | 231095 |
| TCAP    | 89.0  | 100.0 | 99.2  | 601954 |
| TCIRG1  | 113.5 | 95.4  | 89.4  | 259700 |
| TCN2    | 175.6 | 100.0 | 100.0 | 275350 |
| TCTN1   | 98.8  | 95.7  | 92.8  | 614173 |
| TCTN2   | 144.2 | 99.5  | 97.0  | 616654 |
| TCTN3   | 127.6 | 100.0 | 99.8  | 614815 |
| TDP1    | 122.9 | 98.7  | 95.3  | 607250 |
| TDP2    | 165.1 | 99.9  | 98.8  | 616949 |
| TDRD7   | 168.3 | 99.0  | 97.7  | 613887 |
| TECPR2  | 161.1 | 100.0 | 99.9  | 615031 |
| TECR    | 94.6  | 99.9  | 97.9  | 614020 |
| TECTA   | 208.0 | 100.0 | 100.0 | 603629 |
| TELO2   | 98.1  | 97.4  | 93.7  | 616954 |

|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| TENM3    | 185.7 | 99.5  | 98.7  | 615145 |
| TF       | 125.9 | 100.0 | 100.0 | 209300 |
| TFR2     | 104.4 | 98.2  | 93.5  | 604250 |
| TFRC     | 157.2 | 99.9  | 99.1  | 616740 |
| TG       | 133.4 | 100.0 | 99.7  | 274700 |
| TGDS     | 82.4  | 98.1  | 88.8  | 616145 |
| TGM1     | 158.8 | 100.0 | 100.0 | 242300 |
| TGM5     | 173.9 | 100.0 | 100.0 | 609796 |
| TH       | 68.2  | 97.6  | 88.7  | 605407 |
| THOC6    | 248.6 | 100.0 | 99.9  | 613680 |
| THRB     | 167.4 | 100.0 | 99.5  | 274300 |
| TJP2     | 111.1 | 93.8  | 92.2  | 615878 |
| TK2      | 105.7 | 93.4  | 89.4  | 609560 |
| TKT      | 114.1 | 98.7  | 97.7  | 617044 |
| TLE6     | 109.9 | 99.9  | 98.9  | 616814 |
| TMC1     | 122.8 | 98.2  | 93.8  | 600974 |
| TMC6     | 83.7  | 99.9  | 99.0  | 226400 |
| TMC8     | 108.1 | 97.6  | 91.6  | 226400 |
| TMCO1    | 78.7  | 88.0  | 86.5  | 213980 |
| TMEM126A | 120.3 | 98.4  | 86.2  | 612989 |
| TMEM126B | 79.2  | 99.8  | 97.7  | 252010 |
| TMEM138  | 100.2 | 100.0 | 99.5  | 614465 |
| TMEM165  | 113.9 | 99.8  | 98.1  | 614727 |
| TMEM199  | 105.1 | 100.0 | 99.9  | 616829 |
| TMEM216  | 111.9 | 100.0 | 98.7  | 608091 |
| TMEM231  | 111.5 | 100.0 | 99.9  | 614970 |
| TMEM237  | 100.7 | 99.8  | 98.3  | 614424 |
| TMEM38B  | 114.3 | 100.0 | 99.4  | 615066 |
| TMEM5    | 120.5 | 96.8  | 92.9  | 615041 |
| TMEM67   | 72.9  | 93.3  | 83.4  | 216360 |

|           |       |       |       |        |
|-----------|-------|-------|-------|--------|
| TMEM70    | 138.7 | 94.6  | 90.3  | 614052 |
| TMIE      | 109.6 | 98.8  | 92.1  | 600971 |
| TMPRSS15  | 116.9 | 95.5  | 89.1  | 226200 |
| TMPRSS3   | 125.5 | 100.0 | 99.9  | 601072 |
| TMPRSS6   | 101.7 | 100.0 | 99.1  | 206200 |
| TNFRSF11B | 224.8 | 100.0 | 100.0 | 239000 |
| TNFRSF13B | 102.1 | 100.0 | 99.7  | 240500 |
| TNFRSF13C | 55.8  | 76.5  | 66.8  | 613494 |
| TNFSF11   | 150.4 | 99.3  | 93.2  | 259710 |
| TNIK      | 111.1 | 99.9  | 99.3  | 617028 |
| TNNI3     | 86.7  | 98.1  | 86.5  | 611880 |
| TNNT1     | 86.9  | 96.3  | 94.0  | 605355 |
| TNXB      | 96.4  | 98.4  | 91.4  | 606408 |
| TOE1      | 165.1 | 100.0 | 100.0 | 614969 |
| TP53RK    | 37.4  | 91.3  | 76.5  | 617730 |
| TPI1      | 103.0 | 99.2  | 96.7  | 615512 |
| TPK1      | 112.7 | 99.8  | 97.3  | 614458 |
| TPO       | 134.8 | 99.9  | 98.5  | 274500 |
| TPP1      | 146.3 | 100.0 | 100.0 | 204500 |
| TPRN      | 62.7  | 74.7  | 65.4  | 613307 |
| TRAC      | 170.9 | 100.0 | 100.0 | 615387 |
| TRAF3IP1  | 90.3  | 96.3  | 92.8  | 616629 |
| TRAIP     | 141.6 | 100.0 | 100.0 | 616777 |
| TRAPPC11  | 126.2 | 99.4  | 96.4  | 615356 |
| TRAPPC9   | 135.0 | 100.0 | 99.9  | 613192 |
| TRDN      | 71.9  | 83.6  | 70.8  | 615441 |
| TREM2     | 149.0 | 99.9  | 99.6  | 221770 |
| TREX1     | 242.4 | 100.0 | 100.0 | 225750 |
| TRH       | 75.8  | 95.9  | 85.1  | 275120 |
| TRIM2     | 157.7 | 93.6  | 91.4  | 615490 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| TRIM32  | 141.2 | 100.0 | 100.0 | 254110 |
| TRIM37  | 110.2 | 98.2  | 97.2  | 253250 |
| TRIOBP  | 135.6 | 97.0  | 94.9  | 609823 |
| TRIP11  | 84.3  | 95.2  | 87.4  | 200600 |
| TRIP4   | 113.5 | 100.0 | 98.8  | 617066 |
| TRMT10A | 135.2 | 100.0 | 99.4  | 616033 |
| TRMT10C | 131.4 | 99.8  | 98.8  | 616974 |
| TRMT5   | 208.7 | 99.2  | 93.9  | 616539 |
| TRMU    | 99.0  | 100.0 | 99.6  | 613070 |
| TRNT1   | 104.6 | 97.8  | 92.3  | 616959 |
| TRPM1   | 161.0 | 100.0 | 99.6  | 613216 |
| TRPM6   | 151.1 | 99.8  | 98.7  | 602014 |
| TSEN15  | 74.2  | 99.0  | 93.6  | 617026 |
| TSEN2   | 123.8 | 100.0 | 99.8  | 612389 |
| TSEN34  | 53.5  | 90.5  | 85.7  | 612390 |
| TSEN54  | 82.9  | 95.9  | 92.9  | 277470 |
| TSFM    | 127.2 | 100.0 | 100.0 | 610505 |
| TSHB    | 271.7 | 100.0 | 100.0 | 275100 |
| TSHR    | 216.5 | 99.2  | 96.8  | 275200 |
| TSPAN12 | 129.4 | 100.0 | 99.5  | 613310 |
| TSPEAR  | 141.5 | 100.0 | 99.0  | 614861 |
| TSPYL1  | 141.5 | 100.0 | 99.4  | 608800 |
| TTC19   | 92.1  | 80.6  | 72.5  | 615157 |
| TTC21B  | 100.7 | 99.7  | 97.6  | 613819 |
| TTC25   | 103.4 | 100.0 | 99.5  | 617092 |
| TTC37   | 124.0 | 99.6  | 98.1  | 222470 |
| TTC7A   | 123.0 | 99.9  | 98.3  | 243150 |
| TTC8    | 106.9 | 97.9  | 92.0  | 615985 |
| TTI2    | 104.5 | 100.0 | 99.7  | 615541 |
| TTLL5   | 152.7 | 99.9  | 98.7  | 615860 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| TTPA    | 101.5 | 83.6  | 76.6  | 277460 |
| TUBA8   | 177.1 | 99.9  | 99.7  | 613180 |
| TUBGCP4 | 130.8 | 99.1  | 96.2  | 616335 |
| TUBGCP6 | 152.2 | 99.9  | 98.9  | 251270 |
| TUFM    | 135.4 | 100.0 | 99.7  | 610678 |
| TULP1   | 97.8  | 96.8  | 91.7  | 613843 |
| TUSC3   | 136.4 | 100.0 | 98.3  | 611093 |
| TWIST2  | 131.3 | 100.0 | 99.3  | 227260 |
| TWNK    | 178.8 | 100.0 | 100.0 | 616138 |
| TXNL4A  | 109.0 | 100.0 | 99.5  | 608572 |
| TYK2    | 119.2 | 99.9  | 98.8  | 611521 |
| TYMP    | 95.2  | 98.3  | 85.0  | 603041 |
| TYR     | 185.3 | 100.0 | 100.0 | 203100 |
| TYROBP  | 95.2  | 100.0 | 99.9  | 221770 |
| TYRP1   | 176.9 | 100.0 | 99.9  | 203290 |
| UBA5    | 75.4  | 94.1  | 77.1  | 617132 |
| UBE2T   | 107.0 | 100.0 | 99.3  | 616435 |
| UBE3B   | 127.8 | 100.0 | 99.9  | 244450 |
| UBR1    | 128.2 | 99.2  | 96.0  | 243800 |
| UGT1A1  | 240.6 | 100.0 | 100.0 | 218800 |
| UMPS    | 173.6 | 99.3  | 97.2  | 258900 |
| UNC13D  | 97.0  | 99.6  | 97.7  | 608898 |
| UNC80   | 133.4 | 99.9  | 99.1  | 616801 |
| UNG     | 78.4  | 99.5  | 94.2  | 608106 |
| UPB1    | 157.4 | 100.0 | 100.0 | 613161 |
| UQCRB   | 107.6 | 99.6  | 96.8  | 615158 |
| UQCRC2  | 122.6 | 99.9  | 99.1  | 615160 |
| UQCRQ   | 131.3 | 100.0 | 99.9  | 615159 |
| UROC1   | 132.0 | 99.9  | 99.0  | 276880 |
| UROD    | 163.1 | 99.8  | 97.9  | 176100 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| UROS    | 108.3 | 100.0 | 99.9  | 263700 |
| USB1    | 125.0 | 99.9  | 98.2  | 604173 |
| USH1C   | 97.5  | 100.0 | 99.4  | 602092 |
| USH1G   | 195.3 | 98.4  | 96.3  | 606943 |
| USH2A   | 148.5 | 100.0 | 99.7  | 613809 |
| UVSSA   | 149.4 | 99.1  | 98.4  | 614640 |
| VAC14   | 108.4 | 99.8  | 98.5  | 617054 |
| VARS2   | 110.9 | 99.9  | 98.9  | 615917 |
| VDR     | 123.3 | 98.0  | 95.2  | 277440 |
| VHL     | 119.7 | 92.6  | 85.3  | 263400 |
| VIPAS39 | 144.6 | 100.0 | 100.0 | 613404 |
| VKORC1  | 162.1 | 100.0 | 100.0 | 607473 |
| VLDLR   | 200.9 | 99.9  | 99.4  | 224050 |
| VPS11   | 144.9 | 95.3  | 93.2  | 616683 |
| VPS13A  | 69.5  | 95.3  | 85.3  | 200150 |
| VPS13B  | 143.8 | 98.6  | 96.8  | 216550 |
| VPS13C  | 106.6 | 96.6  | 90.0  | 616840 |
| VPS33B  | 138.3 | 100.0 | 100.0 | 208085 |
| VPS37A  | 73.6  | 86.6  | 66.4  | 614898 |
| VPS45   | 131.5 | 96.2  | 94.9  | 615285 |
| VPS53   | 129.2 | 91.4  | 90.4  | 615851 |
| VRK1    | 124.8 | 97.5  | 94.2  | 607596 |
| VSX2    | 77.7  | 99.8  | 97.3  | 610092 |
| VWA3B   | 141.5 | 99.8  | 98.4  | 616948 |
| WASHC4  | 91.8  | 95.3  | 89.6  | 615817 |
| WDPCP   | 107.3 | 93.9  | 88.9  | 615992 |
| WDR34   | 106.6 | 99.5  | 96.2  | 615633 |
| WDR35   | 145.1 | 99.3  | 97.7  | 613610 |
| WDR60   | 114.2 | 99.1  | 96.3  | 615503 |
| WDR62   | 161.5 | 100.0 | 99.7  | 604317 |

|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| WDR72   | 132.2 | 96.5  | 95.4  | 613211 |
| WDR73   | 138.9 | 100.0 | 100.0 | 251300 |
| WDR81   | 163.3 | 99.9  | 99.4  | 610185 |
| WEE2    | 102.2 | 99.6  | 95.7  | 617996 |
| WFS1    | 251.4 | 100.0 | 99.7  | 222300 |
| WHRN    | 114.0 | 99.8  | 98.8  | 607084 |
| WISP3   | 118.4 | 100.0 | 100.0 | 208230 |
| WNK1    | 167.7 | 99.9  | 99.5  | 201300 |
| WNT1    | 188.8 | 100.0 | 99.9  | 615220 |
| WNT10A  | 114.0 | 100.0 | 99.1  | 257980 |
| WNT10B  | 144.7 | 100.0 | 99.9  | 225300 |
| WNT3    | 166.8 | 100.0 | 99.6  | 273395 |
| WNT4    | 263.1 | 93.4  | 92.7  | 611812 |
| WNT7A   | 216.8 | 100.0 | 100.0 | 228930 |
| WRAP53  | 154.4 | 100.0 | 100.0 | 613988 |
| WRN     | 123.6 | 98.3  | 94.6  | 277700 |
| WVOX    | 130.9 | 100.0 | 99.7  | 616211 |
| XDH     | 109.1 | 100.0 | 99.9  | 278300 |
| XPA     | 52.9  | 98.5  | 88.9  | 278700 |
| XPC     | 140.7 | 100.0 | 99.7  | 278720 |
| XPNPEP3 | 134.0 | 100.0 | 99.2  | 613159 |
| XRCC4   | 103.2 | 99.7  | 97.3  | 616541 |
| XYLT1   | 132.5 | 90.4  | 87.1  | 615777 |
| XYLT2   | 136.3 | 98.9  | 94.9  | 605822 |
| YARS2   | 173.2 | 99.8  | 98.9  | 613561 |
| YME1L1  | 105.3 | 97.7  | 91.9  | 617302 |
| YY1AP1  | 159.2 | 98.3  | 97.0  | 602531 |
| ZAP70   | 185.6 | 99.9  | 99.5  | 269840 |
| ZBTB16  | 151.4 | 100.0 | 100.0 | 612447 |
| ZBTB24  | 178.1 | 100.0 | 100.0 | 614069 |



|          |       |       |       |        |
|----------|-------|-------|-------|--------|
| ZC3H14   | 184.1 | 99.6  | 97.2  | 617125 |
| ZFYVE26  | 120.3 | 99.9  | 99.4  | 270700 |
| ZMPSTE24 | 113.3 | 100.0 | 99.1  | 275210 |
| ZMYND10  | 136.5 | 100.0 | 100.0 | 615444 |
| ZNF408   | 135.7 | 100.0 | 100.0 | 616469 |
| ZNF423   | 250.8 | 100.0 | 100.0 | 614844 |
| ZNF469   | 93.1  | 98.7  | 96.3  | 229200 |
| ZNF513   | 110.7 | 100.0 | 99.7  | 613617 |
| ZP1      | 196.0 | 100.0 | 100.0 | 615774 |

*Gene symbols used follow HGNC guidelines: Gray KA, Yates B, Seal RL, Wright MW, Bruford EA. Nucleic Acids Res. 2015 Jan;43(Database issue):D1079-85.*

*Median Coverage describes the average number of reads seen across 50 exomes.*

*% Covered 10x describes the percentage of a gene's coding sequence that is covered at least 10x.*

*% Covered 20x describes the percentage of a gene's coding sequence that is covered at least 20x.*

*Genes with Median Coverage and % Covered 10x/20x denoting NC are non-coding genes for which coverage statistics could not be generated.*

*OMIM release used for OMIM disease identifiers and descriptions : October 1st, 2016.*

*Ad 1. "No OMIM phenotype" signifies a gene without a current OMIM association Ad 2. OMIM phenotype descriptions between {} signify risk factors*