**Supplementary Table 1. Reassembling the human X chromosome: 33 regions scrutinized, 29 of which we sequenced using the SHIMS approach**

| Region # | Putative ampliconic region[a] | Region selected because of: | Insights gained from single haplotype sequence | GenBank accession numbers for SHIMS assemblies | GenBank accession numbers for BACs or fosmids spanning the region (ordered 5' to 3')[b] |
|---|---|---|---|---|---|
| 1 | chrX:36935232-37109891 | Gap | Newly identified palindrome | JH720451, JH720452 | **AC233304, AL606516, AC233310, AC233287, AL592156**, BX469939, BX842585, BX842588, AC006924, BX842568, **AC243371**, gap, **AC243975, AC245096, AC233283, AC233297, AC233292** |
| 2 | chrX:45392748-45475100 | Misoriented fosmid ends | | JH806589 | AL034412, **AC234772**, AL031584 |
| 3 | chrX:46653968-46756755 | Misoriented fosmid ends | | KB021648 | **AL627143** |
| 4 | chrX:48087689-48177927 | Amplicons | | JH806590 | **AC244636, AC245047, AL606490** |
| 5 | chrX:48863143-48949325 | Amplicons | | JH806590 | **AC231533, AC233300, AC233294, AC231657** |
| 6 | chrX:48962948-49331797 | Gap and amplicons | Gap due to tandem array with ~25 copies (data not shown) | JH806590 | **AC232271, AC233302**, tandem array represented by flanking BACs, AC142497, **AC231643, AC231644** |
| 7 | chrX:49619684-50357383 | Gap | Gap due to unclonable intervening sequence | JH806590, JH806587 | **AC236430, AC231645, AC235789, AC243516**, gap, **AC239396**, AL357894, **AC233286**, AL121865, AL445491, AL359272, **AL359914, AC239367**, AL954833, AL391379, **AC233976**, AL158055, AL390060 |
| 8 | chrX:51412207-51509602 | Amplicons | | JH806587 | **AC234030** |
| 9 | chrX:51792300-51983269 | Amplicons | | JH806587 | **AC241520**, AL929410, **AC239585, AC245177**, AL928717 |
| 10 | chrX:52534857-53044111 | Gap and amplicons | Closed gap and reassembled ampliconic region | JH806587 | **AC231759, AC231532, BX088602, BX510359, AL450023, AC244505, AC234031, AL807736**, BX322635, AL591212, AL139396, **AC245102, AC233728, AC231658, BX323845, AC233279** |
| 11 | chrX:55480842-55590897 | Amplicons | | | AL590410[c] |
| 12 | chrX:62252458-62412075 | Amplicons | | JH806591 | **AL359854, AC246786, AC234780, AC158203** |
| 13 | chrX:70810842-70972407 | Amplicons | | | BX276092[c] |
| 14 | chrX:71857884-72241800 | Amplicons | | JH806592 | **AC240504, AC234776, AL662864** |
| 15 | chrX:76449373-76713483 | Gap | Gap due to unclonable intervening sequence | JH720453, JH720454 | **AC233982, AC233281, AC233981**, AL442646, **AL590789, AC233284, AC239601, AC233296, AC233277, AC240392**, AC017089, **AC233301, AC234032, AC243977**, gap, **AC243316**, BX510371, **AC233305, AC233293, AL138743** |
| 16 | chrX:100705379-100790633 | Amplicons | | JH806593 | **AC234775** |
| 17 | chrX:101322434-101661047 | Amplicons | | JH806594 | **AC234791, AC235565** |
| 18 | chrX:103081761-103248997 | Amplicons | | JH806595 | **AC234782, AC234783** |
| 19 | chrX:105369795-105457848 | Misoriented fosmid ends | | | **AL133271** |
| 20 | chrX:113234060-113655429 | Gap | Gap due to unclonable intervening sequence | JH806588, JH806601 | **AL442070, AC233289, AC233295, AL591842[d], AC236668, AC233303, AC233285,** BX510661, FP565586 gap, AC243413, AL953862, AL589677, AC233299, AL590097, AL355812, AL121878, AL445164, **AL589786, AC239923, AC239600**, AC003983, **AL589842**, AC005000 CR753863[c] |
| 21 | chrX:114862471-114932208 | Amplicons | | | |
| 22 | chrX:115410626-115831995 | Gap | Gap due to unclonable intervening sequence | JH806602, JH806603 | BX546444, BX323838, **AL772226, AL732602, AC233725, AC233291, AC241580, AC243535,** gap, **BX530410, BX510313, BX119904, BX284115, AL732586, AL732604, AL732637** |
| 23 | chrX:119024827-119237455 | Amplicons | Reassembled ampliconic sequence | JH806596 | **AC240732, AC240549** |
| 24 | chrX:119882751-119954883 | Amplicons | | | AL670379[c] |
| 25 | chrX:134106841-134230880 | Amplicons | | JH806597 | **AC234771** |
| 26 | chrX:134618182-134823894 | Amplicons | Reassembled ampliconic sequence | JH806597 | **AC240442, AC240441**, AL953870, AL732579 |
| 27 | chrX:139874095-140551160 | Amplicons | | JH806598 | AL451048, **AC234778, AC234777, AC234779, AC234774, AC235097, AC240443** |
| 28 | chrX:143132077-143553446 | Gap | Gap due to unclonable intervening sequence | JH806599, JH806600 | **AC239727, AC239395, AC239921, AL500522, AL135920, AL590424, AC231838, AC231661, AC234064, AC243369**, gap, **AC243412, AC231757, AC231840, AC231842** |
| 29 | chrX:148450053-148846052 | Gap and amplicons | Closed gap and newly identified palindrome | JH159150 | **AC231841, AC231760, AC231843, AC231656, AC233288, AC244197, AC244098, AC244099, BX322650, AC231839**, BX321867, **AC235697, AC235953** |
| 30 | chrX:151578519-151722859 | Amplicons | | JH159150 | **AC244102** |
| 31 | chrX:151955838-152212442 | Amplicons | Closed gap and reassembled ampliconic sequence | JH159150 | **AC243591, AC243428, AC243374**, AC226403, AC152010, **AC236972** |
| 32 | chrX:153191585-153475817 | Amplicons | | JH159150 | **AC244097, AC245140, AC244090, AC244107** |
| 33 | chrX:154217902-154417402 | Amplicons | | JH159150 | **AC234781, BX571846** |

a. Genomic coordinates are from human genome reference assembly version hg18 (NCBI37), the reference version from which we initiated our reassemblies. Each region's coordinates are encompassed within the collection of clones sequenced across the region (Column #6).
b. Accession numbers in bold indicate BACs or fosmids with newly generated or revised full-length finished sequence or contigs of SHIMS assemblies. Accession numbers not in bold represent pre-existing clone sequences which have not been re-examined.
c. Regions already spanned by single-haplotype sequence, which we therefore did not sequence across.
d. This clone's sequence is currently in the process of being finished.