

## **DATABASE NEWS**

### ***January 26, 2018***

- Two Asian Yfiler Plus samples were identified as duplicates, coming from the same individuals, so these two samples were removed and the Database Release number was changed to 4.2.1.

### ***February 18, 2017***

- The database was updated to Release 4.2 to include a total of 35,660 haplotypes. An additional 366 haplotypes were uploaded to the website (84 Yfiler haplotypes, 46 PowerPlex Y23 haplotypes, and 236 Yfiler Plus haplotypes).

The South Dakota Forensic Lab donated 175 samples, the DuPage County Forensic Science Center donated 116 samples, the Phoenix Police Department donated 32 samples, the Santa Clara County Crime Laboratory donated 22 samples, the San Diego Sheriff's Department donated 19 samples, and NMS Labs donated 2 samples. The Mixture Analysis Tools will be updated with the new data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### ***September 20, 2015***

- A Caucasian Yfiler sample was removed from the database. A contributor contacted us and stated that a sample submitted to the database in 2012 reportedly from a Caucasian was an error since the sample donor was actually of unknown ancestry. All graphs and linked information were updated to reflect this change.

### ***November 4, 2014***

- The Connecticut Forensic Lab Y-Mixture Tool has been updated to include the data from Release 4.1. The remaining tools will be updated when they become available.

### ***October 30, 2014***

- The California Department of Justice Y-mix Database Filter Tool has been updated to include the data from Release 4.1. The remaining tools will be updated when they become available.

### ***September 25, 2014***

- Two samples' haplotypes were updated.

### ***September 18, 2014***

- The minimum and maximum expected data set graphs were removed from the Database Descriptive Statistics, Release 4.1. With the addition of markers for multiple kits, these graphs proved to be more confusing than useful.

### *August 23, 2014*

- The database was updated to Release 4.1. The database now accommodates Yfiler Plus haplotypes. An additional 2324 haplotypes were uploaded to the website (3 PowerPlex Y, 1006 Yfiler, 894 Yfiler Plus, and 421 PowerPlex Y23 haplotypes) and 977 haplotypes were extended to include Yfiler Plus data. At the request of the FBI, one sample was also removed pending sequencing due to ambiguity of an allele call.

The FBI Nuclear DNA Unit donated 992 samples, Thermo Fisher donated 894 samples, the Oregon State Police donated 394 samples, the DuPage County Forensic Science Center donated 26 samples, the San Diego Sheriff's Department donated 13 samples, and NMS Labs donated 5 samples. The Minnesota Department of Public Safety and NIST donated additional data for 927 samples. The Mixture Analysis Tools will be updated with the new Yfiler data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

On the database homepage, a drop-down menu was added which allows users to rearrange the markers to coincide with their Y-STR kit. This drop-down menu only reorders the markers for ease of data entry and performs no other function.

### *March 30, 2014*

- The database was updated to Release 4.0. No additional haplotypes were added at this time. This new release has been coordinated with the release of the new 2014 SWGDAM Guidelines ([SWGDAM Interpretation Guidelines for Y-Chromosome STR Typing by Forensic DNA Laboratories, 2014](#)) and incorporates (i) an additional calculation (the match probability) as recommended in the new Guidelines and (ii) a modified report format now in tabular form. It is important to note that, as before in the previous version of the database, after entering a Y-STR haplotype, the database will be searched and a report generated that provides (i) the count and estimated frequency, and (ii) the 95% confidence limit on the estimate. In addition, however, now a match probability (and equivalent likelihood ratio assuming a single donor) is calculated according to equation (3) of Section 10.3 of the 2014 Guidelines.

Individuals or Laboratories who currently use US-YSTR Database for casework analysis can continue as before since the same calculations are used for the count, estimated frequency and the 95% confidence limit on the estimate. Individuals or laboratories who wish to incorporate the new match probability calculation into casework are advised to familiarize themselves with the new 2014 SWGDAM Guidelines.

### *March 17, 2014*

- The Connecticut Mixture Tool has been updated to include the data from Release 3.3.

### *March 10, 2014*

- The Massachusetts Mixture Tool has been updated to include the data from Release 3.3. The remaining tool will be updated when it becomes available.

### *February 11, 2014*

- The Denver Y-mix Tool and the Harris County Mixture Tool have been updated to include the data from Release 3.3. The Massachusetts and Connecticut mixture tools are currently being updated by their developers and will be added to the site when they are received.

### *February 7, 2014*

- The California Department of Justice Y-mix Database Filter Tool has been updated to include the data from Release 3.3. The remaining tools will be updated when they become available.

### *February 1, 2014*

- The database was updated to Release 3.3 to include a total of 32,972 haplotypes. An additional 3218 haplotypes were uploaded to the website (1070 Yfiler haplotypes and 2148 PowerPlex Y23 haplotypes).

Promega donated 2121 samples, the FBI donated 978 samples, the DuPage County Forensic Science Center donated 86 samples, the San Diego Sheriff's Department donated 16 samples, the Santa Clara County Crime Laboratory donated 14 samples, and GenQuest DNA Analysis Laboratory donated 3 samples. The Mixture Analysis Tools will be updated with the new data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *September 2, 2013*

- The Harris County Mixture Tool has been fixed and is now functioning correctly.

### *August 25, 2013*

- The California Department of Justice Y-mix Database Filter Tool, the Denver Y-mix Tool, and the Harris County Mixture Tool have been updated to include the data from Release 3.2. The remaining tools will be updated when they become available.

### *August 18, 2013*

- The database was updated to Release 3.2 to include a total of 29,754 haplotypes. An additional 3969 haplotypes were uploaded to the website (3630 Yfiler haplotypes and 339 PowerPlex Y23 haplotypes) and 366 haplotypes (255 Y-PLEX and 111 PowerPlex Y) were extended to PowerPlex Y23.

The Illinois State Police donated 98 new samples and data to extend 366 samples to PowerPlex Y23. The San Diego Sheriff's Regional Crime Laboratory donated 4 samples, the Santa Clara County Crime Laboratory donated 41 samples, Fairfax Identity Laboratories donated 241 samples, and the FBI Nuclear DNA Unit donated 3585 samples. The Mixture Analysis Tools will be updated with the new data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *February 26, 2013*

- The Massachusetts State Police Mixture Tool has been updated to include the data from Release 3.1. The remaining tools will be updated when they become available.

### *February 18, 2013*

- The Harris County Mixture Tool has been updated to include the data from Release 3.1. The remaining tools will be updated when they become available.

### *February 12, 2013*

- The California Department of Justice Y-mix Database Filter Tool and the Denver Y-mix Tool have been updated to include the data from Release 3.1. The remaining tools will be updated when they become available.

### *February 2, 2013*

- The database was updated to Release 3.1. An additional 2368 haplotypes were uploaded to the website (1772 Yfiler haplotypes and 596 PowerPlex Y23 haplotypes) and 13 Yfiler haplotypes were extended to PowerPlex Y23. The San Diego Sheriff's Regional Crime Laboratory donated 7 samples, the Santa Clara County Crime Laboratory donated 27 samples, NIST donated 596 samples and the data to extend 13 Yfiler samples to PowerPlex Y23, and the FBI Nuclear DNA Unit donated 1738 samples. The Mixture Analysis Tools will be updated with the new Yfiler data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *July 29, 2012*

- The database was updated to Release 3.0. The database now accommodates PowerPlex Y23 haplotypes. An additional 4700 haplotypes were uploaded to the website (3749 Yfiler haplotypes and 951 PowerPlex Y23 haplotypes) and 429 Yfiler haplotypes were extended to include PowerPlex Y23 data. The San Diego Sheriff's Regional Crime Laboratory donated 15 samples, the Santa Clara County Crime Laboratory donated 29 samples, the Marshall University Forensic Science Center donated 239 samples, the University of North Texas Health Science Center donated 951 samples, the FBI Nuclear DNA Unit donated 3466 samples, and NIST donated additional data for 429 of their samples. The Mixture Analysis Tools will be updated with the new Yfiler data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *January 11, 2012*

- The Harris County and California DOJ Mixture Analysis Tools have been updated to include the samples added to the database to create Release 2.6 on January 3, 2012.

### *January 3, 2012*

- The database was updated to Release 2.6. An additional 61 Yfiler (17 loci) haplotypes were uploaded to the website: 3 African American, 35 Caucasian, 16, Hispanic, and 7 Asian. The Santa Clara County Crime Laboratory donated 22 samples and the San Diego Sheriff's Regional Crime Laboratory donated 39 samples. The Mixture Analysis Tools will be updated with the new data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *August 17, 2011*

- The Harris County and California DOJ Mixture Analysis Tools have been updated to include the samples added to the database to create Release 2.5 on July 31, 2011.

### *July 31, 2011*

- The database was updated to Release 2.5. An additional 111 Yfiler (17 loci) haplotypes were uploaded to the website: 12 African American, 78 Caucasian, 16, Hispanic, and 5 Asian. The Marshall University Forensic Science Center donated 73 samples, the Santa Clara County Crime Laboratory donated 31 samples, and the Richland County Sheriff's Department in Columbia, SC donated 7 samples. The Mixture Analysis Tools will be updated with the new data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *January 10, 2011*

- The Harris County and California DOJ Mixture Analysis Tools have been updated to include the samples added to the database to create Release 2.4 on January 2, 2011.

### *January 2, 2011*

- The database was updated to Release 2.4. An additional 99 Yfiler (17 loci) haplotypes were uploaded to the website: 7 African American, 52 Caucasian, and 40 Asian. The Marshall University Forensic Science Center donated 59 samples and the Washington State Police Crime Laboratory in Vancouver donated 40 samples. The Mixture Analysis Tools will be updated with the new data as soon as possible. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *December 2, 2010*

- Please note that, due to a major transformer power upgrade, the Y-STR database server will have to be shut down from Friday December 3rd 2010 at 4 PM EST until 9 AM Monday 6th December EST. Depending upon the upgrade progress, it is possible that service will not be interrupted for the whole duration. Any inconvenience caused is regretted.

### *July 31, 2010*

- The database was updated to Release 2.3. An additional 249 Yfiler (17 loci) haplotypes were uploaded to the website: 119 African American, 70 Caucasian, 54 Hispanic and 6 Asian. NCFS typed 185 of these samples, the Santa Clara County Crime Laboratory donated 32 samples, and the California Department of Justice Sacramento Crime Laboratory donated 32 samples. Both mixture analysis tools have also been updated with the new samples. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *July 14, 2010*

- A contributor informed us that 58 samples donated and uploaded to the database on January 24, 2010 had been transposed incorrectly at the locus DYS391. The issue was immediately rectified.

### *June 20, 2010*

- Two Mixture Analysis Tools were added to the database. The Mixture Analysis Tools are provided as a service to the forensic community. NCFS has not performed extensive validation of these tools and therefore the presence of a tool does not necessarily imply the endorsement of the method by NCFS. The software tools compute the possible haplotype contributors to a forensic casework Y-STR mixture and provide a count of how many times these haplotypes are found in the database.

Prior to use in any criminal and/or civil case matter, users will need to conduct their own validation of the software and/or independently confirm the results on a case-by-case basis. Instructions for use are included in each program.

### *March 26, 2010*

- As of this date, the database now calculates exact confidence intervals according to Clopper, C.J. and E.S. Pearson, 'The use of confidence or fiducial intervals illustrated in the case of the binomial'. *Biometrika* (1934). 26: p. 64-69. Additional information, including the formula, can be found in the User Directions.

### *January 24, 2010*

- The database was updated to Release 2.2. An additional 335 Yfiler (17 loci) haplotypes were uploaded to the website: 212 Caucasian, 102 African American, 13 Hispanic and 8 Asian. NCFS typed 277 of these samples and the Santa Clara County Crime Laboratory donated 58 samples. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *July 1, 2009*

- The database was updated to Release 2.1. An additional 649 haplotypes were uploaded to the website: 442 Caucasian, 200 African American, and 7 Asian. NCFS typed 619 of these samples using Yfiler (17 loci) and the Orange County California Coroner's Office donated 30 12-locus PowerPlex Y samples. The Database Descriptive Statistics for all prior Releases can be downloaded from the Introduction link of the homepage.

### *May 28, 2009*

- Applied Biosystems informed us that they inadvertently included a duplicate Hispanic Yfiler sample in their data set for the Release 2.0 update performed on March 1, 2009. This sample was removed and all Descriptive Statistics were updated to reflect this change.

### *May 7, 2009*

- After a request for Release 1.0 Database Descriptive Statistics information for court purposes subsequent to the update of the database to Release 2.0, all archived information for any previous releases can now be downloaded from the Introduction link located on the database homepage.

### *March 1, 2009*

- The database was updated to Release 2.0. An additional 3,310 haplotypes were uploaded to the website: 1062 African American, 115 Asian (Southern Indian), 1062 Caucasian, and 1071 Hispanic. Applied Biosystems donated 2912 17-locus haplotypes (950 African American, 957 Caucasian, and 1005 Hispanic). The Illinois State Police donated 283 11-locus haplotypes (112 African American, 105 Caucasian, and 66 Hispanic) and 115 12-locus haplotypes (Asian/Southern Indian).

### *September 10, 2008*

- An update to Management information performed on September 8, 2008 changed the data set returned when searching all 17 loci from 4163 to 4166. IT corrected the issue and implemented code that would prevent the problem from arising again. The effect on frequency results during this time is negligible.

### *August 18, 2008*

- Updated the Populated Loci section of the Database Descriptive Statistics to include a better description of the variation in the number of populated markers within the database observed during partial profile searches. The database is designed to query only those samples that possess data at the particular markers chosen by the user, resulting in a data set that varies depending on which markers are selected.

### *August 8, 2008*

- Adjusted and validated the > (greater than) and < (less than) queries. Previously, the database returned only exact matches to the > and < allele designations. A user can now select from the drop-down menu or manually enter an allele with a > or < designation at any marker and the database will also return alleles greater than or less than the entry and calculate these haplotypes into the results table and statistics statements.

### *July 29, 2008*

- It was brought to our attention that the data set returned when searching all 17 loci had changed from 4163 to 4165. Upon closer inspection, two partial profiles were registering as full profiles and being counted in the query. The partial profiles in question were being counted correctly in partial queries and the issue was corrected, returning the data set to 4163. The effect on frequency results during this time is negligible.

### *May 23, 2008*

- Edited the Introduction to include a better description of the US Y-STR Database and its intended use, specifically clarifying the difference when compared to the CODIS database. Also added a single PDF download under the Introduction link for all website information and pertaining publications.
- Added information to the Database Descriptive Statistics illustrating the discrimination potential and the number of unique haplotypes in the current release.
- Completed Sample Submission protocol to increase database size (N) and added information to link on homepage

### *March 3, 2008*

- Completed application to automatically upload haplotypes directly from Genotyper and GeneMapper text files for database queries
- Changed heading of last column in results table under "View Details" from "Confidence Interval" to "Frequency Upper Bound (95%)"
- Awaiting the receipt of 3000 complete Yfiler haplotypes: 1000 Caucasian, 1000 African American, and 1000 SW Hispanic

### *February 29, 2008*

- **PLEASE NOTE:** From January 3, 2008 to February 29, 2008, the last column in results table under "View Details" gave the frequency upper bound (95%), then entitled "Confidence Interval," while the statistics statements under "Overall Database Summary" gave the frequency upper bound of >99%. The statistics statements were changed to reflect the 95% upper bound frequency given in the results table.