

Boston University, Biomedical Forensic Sciences

DNA Mixture Analysis Training Tool

Funded by:

NIJ Forensic Science Training Development and Delivery Program
NIJ Grant # 2008-DN-BX-K158, awarded to Biomedical Forensic
Science Program at **Boston University** School of Medicine



DNA Mixture Analysis Training

Tool-Profiles

- Profiles
 - Single source
 - Two person
 - Three person
 - Four person
- Varying amounts
 - 0.625 to 4ng
- Varying ratio of contributors from (1:1-1:19) in both directions
- Amplification kits
 - PowerPlex 16
 - Identifiler
 - Yfiler
 - Minifiler
- Three injection times
- 930 samples amplified
- 2790 profiles




DNA Mixture Analysis Training Tool-Website

- Lessons on basic features of DNA profiles that impact mixture analysis
- Profiles in lessons can be viewed and compared and enlarged
- User can save their notes and answers
- All website profiles with corresponding ladders and controls can be downloaded as .fsa files for use in training or other purposes

DNA Mixture Analysis Training Tool-Website

Boston University Biomedical Forensic Sciences

DNA Mixtures

 lessons  admin  sign out

DNA Lessons

Active Lessons

[Lesson 02: Single Source Samples: Artifacts - Identifying & Troubleshooting](#)

[Lesson 12: Recognizing a Mixed DNA Sample](#)

All Lessons

[Lesson 02: Single Source Samples: Artifacts - Identifying & Troubleshooting](#)

[Lesson 12: Recognizing a Mixed DNA Sample](#)

Account Settings

- [Change password](#)

Help

- [Documentation](#)
- [Further Information](#)

Profile Files

- [1-Person Profiles \(C\) and \(D\)](#)
- [1-Person Profiles \(A\) and \(B\)](#)
- [2-Person Profiles \(AB\)](#)
- [2-Person Profiles \(CD\)](#)
- [3-Person Profiles](#)



DNA Mixture Analysis Training Tool-Website



Figure 1. The profile from a two person mixed DNA sample amplified with the Identifiler kit and injected for 2 seconds is shown. Multiple alleles present at many loci clearly indicate the presence of a mixture.

The profile shown in Figure 1 contains a mixture of DNA from two males mixed at a 4:1 ratio and amplified with the Identifiler kit. The presence of four alleles at the D8S1179 locus and three alleles at the D21S11, D7S820, and CSF1PO loci in the first row of the profile clearly indicates the presence of a mixture of DNA. Additional three allele loci (e.g., D3S1358, D13S317, D16S539, D2S1338, D19S433, vWA, D5S818, and FGA) and another four allele locus (D18S51) are consistent with this conclusion.

In addition to the multiple alleles, peak height imbalance is also present at all of the loci in the profile shown in Figure 1. As discussed in Lesson 1, heterozygous alleles in a single source profile are expected to be present in equal amounts and therefore have approximately the same peak heights (or peak areas); however, some variation due to the technical limitations of testing is routinely observed. As seen in Figure 2 below, the peak height imbalance at the TPOX locus, which has only two alleles with a ratio of 0.22 or 22% (i.e., 506 RFU/2333 RFU), indicates the presence of a mixture of DNA. The peak height ratio at the TH01 locus, which is the only other locus with just two alleles in this mixture, is 0.67 or 67% (i.e., 788/1178). Although the TH01 locus data alone may be insufficient to determine that a mixture is present, the data support the conclusion of a mixture determined using the other loci.

DNA Mixture Analysis Training Tool-Website

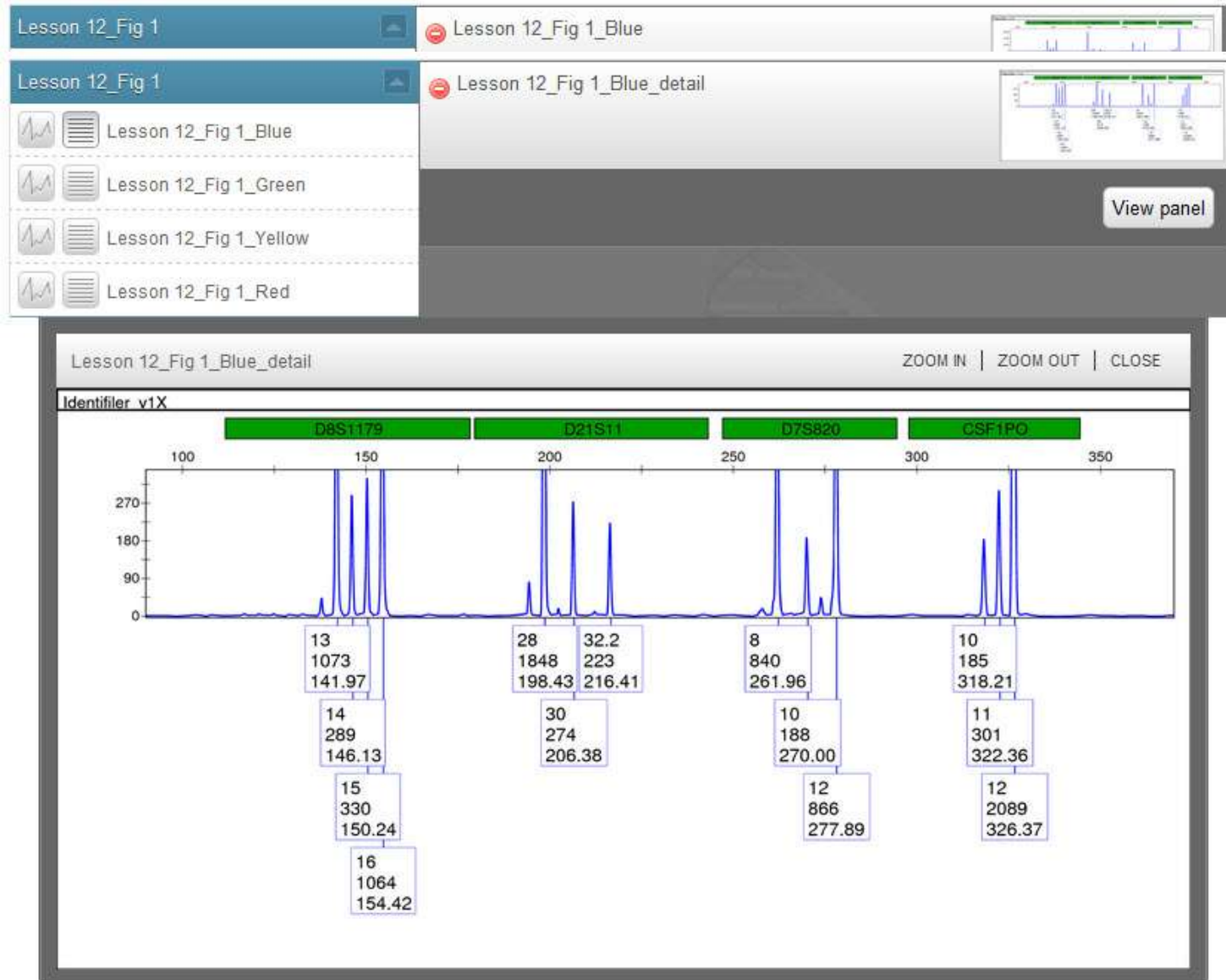


Figure 1. The profile from a two person mixed DNA sample amplified with the Identifiler kit and injected for 2 seconds is shown. Multiple alleles present at many loci clearly indicate the presence of a mixture.

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Problem Set 3

Question 1:

Based on the information presented, does this DNA profile contain a mixture of DNA?

Lesson 12_Ex 3_Q1

Lesson 12_Ex 3_Q1_Blue

Lesson 12_Ex 3_Q1_Green

Lesson 12_Ex 3_Q1_Yellow

Lesson 12_Ex 3_Q1_Red

Lesson 12_Ex 3_Q1_Blue



View panel

Student Responses

Notes

Write and save any notes or comments here.

Save Answers

Website is coming soon. Will
announce launch on STRBase