

The Problem (1)

Partial Profiles due to:

- Low Template Amount
- Inhibition
- Degradation

The Problem (2)

Partial Profiles due to:

- Interference with electrokinetic injection of STR amplicons by primers, nucleotides and salts from PCR reaction
- Only 4% of PCR reaction is used for electrophoresis

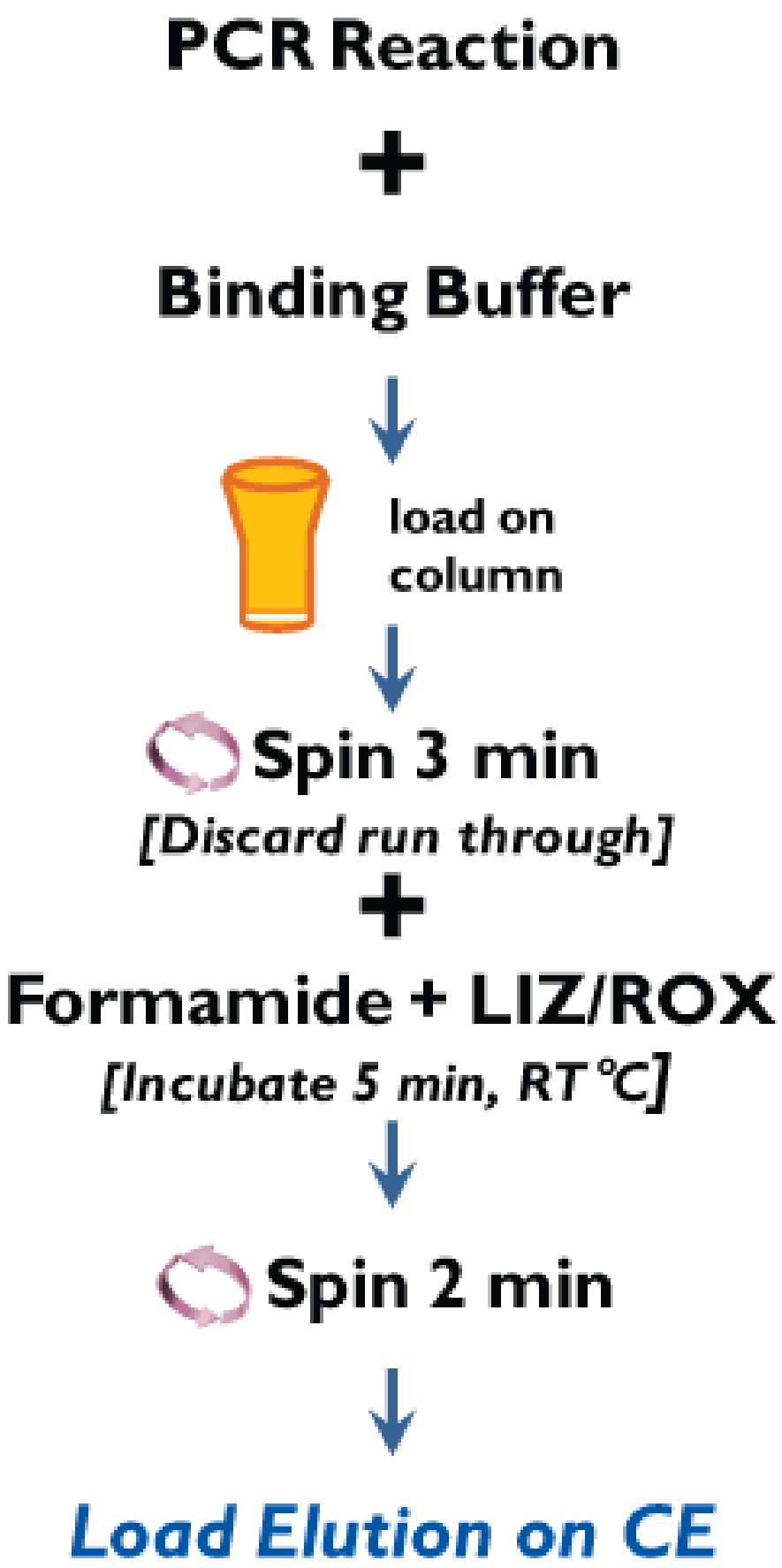
The Solution

- Remove primers, nucleotides and salts from post-PCR sample
- Use **ALL** of PCR reaction for electrophoresis

Advantages of **Amplicon Rx™**

- Quick 3 step procedure (10 min Prep Time)**
- CE Ready Elution with Formamide/SS mix**
- 95% of PCR reaction is used for CE (ALL what is left after first CE run)**

Amplicon Rx™ workflow



Validation Method

Samples were amplified with either PowerPlex 16, Identifiler, or Y-filer multiplexes. After verification of the DNA profiles, samples were diluted with amplification negative control samples to simulate low copy number (LCN) samples. PCR reaction volumes were varied as shown: quarter (6.25µL), half (12.5µL), and full (25µL) size PCR reaction from which 5µL, 11µL and 23.5µL of LCN Power Plex16, Identifiler, or Y-filer samples were processed with **AmpliconRx™**.

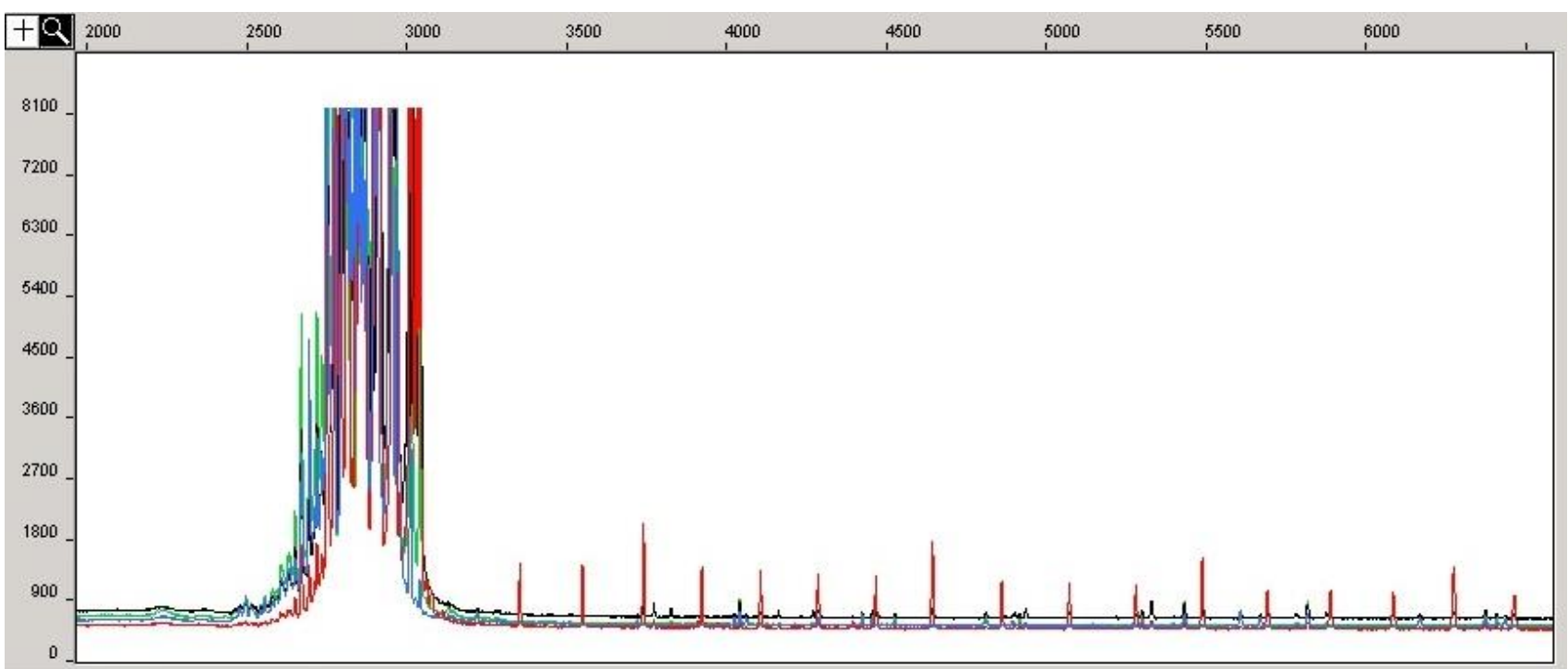
Results Summary

In all samples analyzed, **Amplicon Rx™** boosted peaks which were originally present in the sample. A 50 RFU threshold was used for peak detection. **Amplicon Rx™** did not introduce ‘new’ or extraneous alleles - allelic peak height ratios observed in untreated samples (including mixtures) were preserved using **Amplicon Rx™**

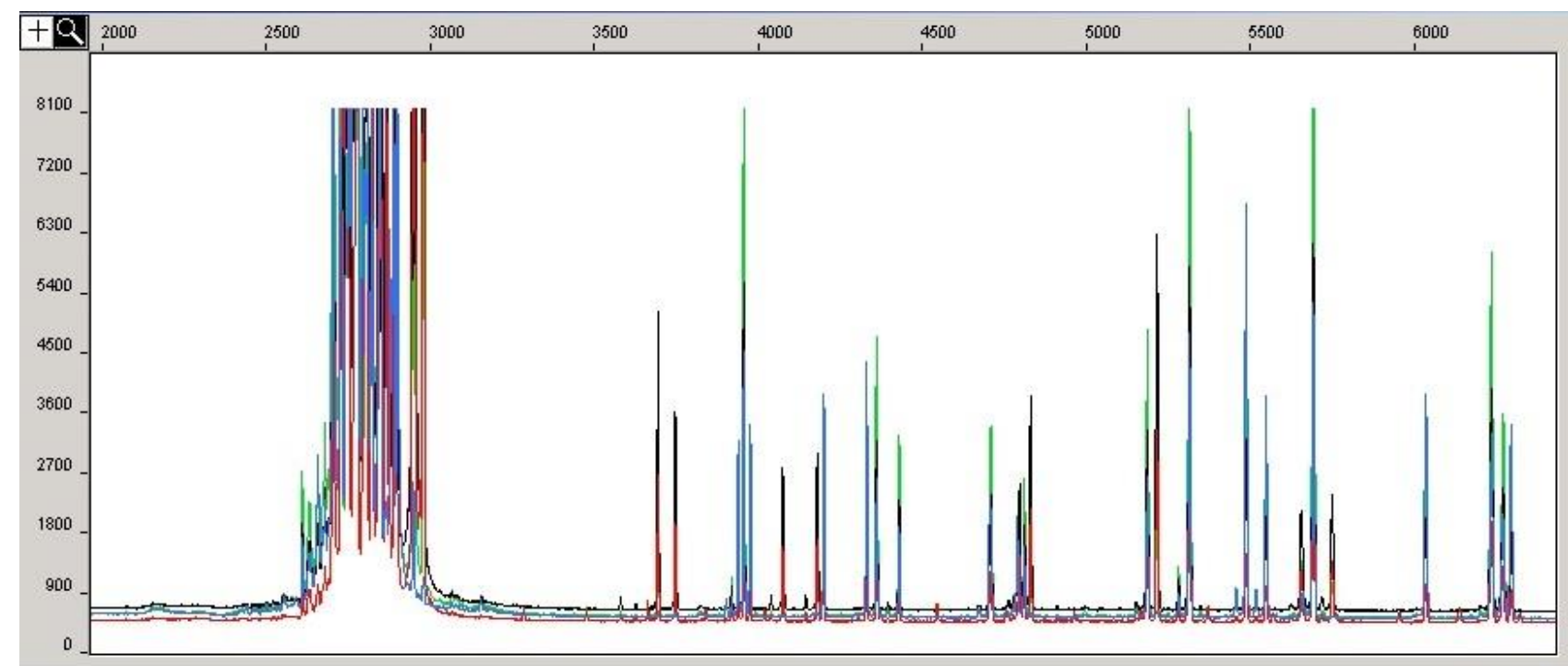
Proof of Concept

PowerPlex 16

Before **Amplicon Rx™**

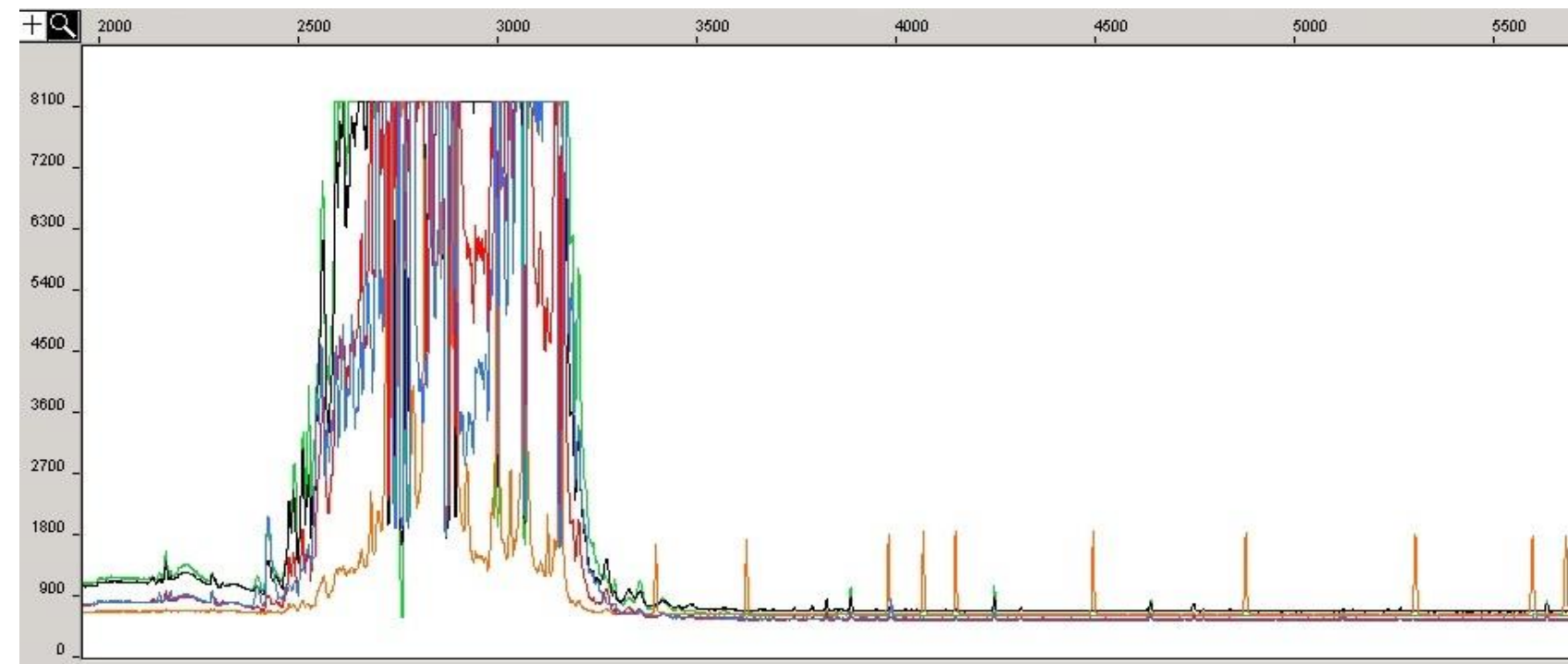


After **Amplicon Rx™**

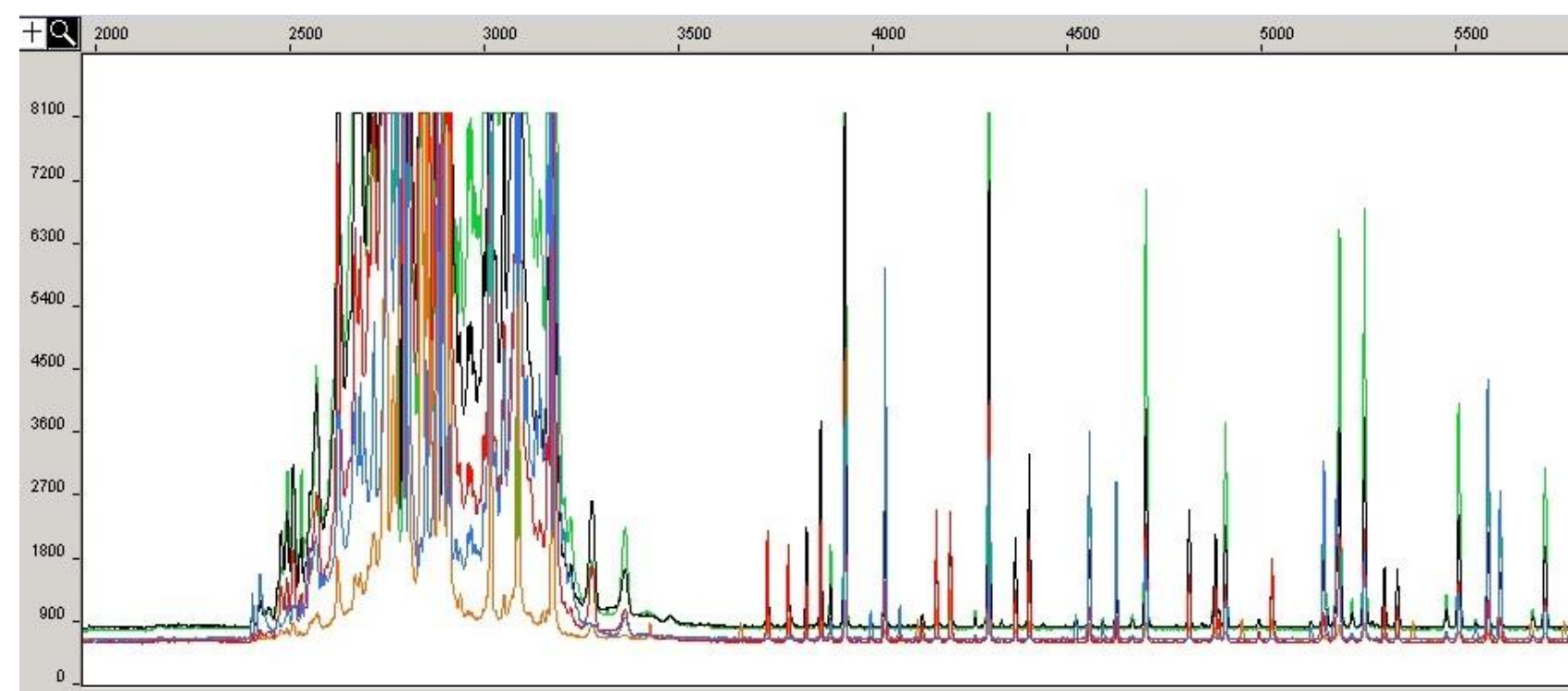


Identifiler

Before **Amplicon Rx™**



After **Amplicon Rx™**

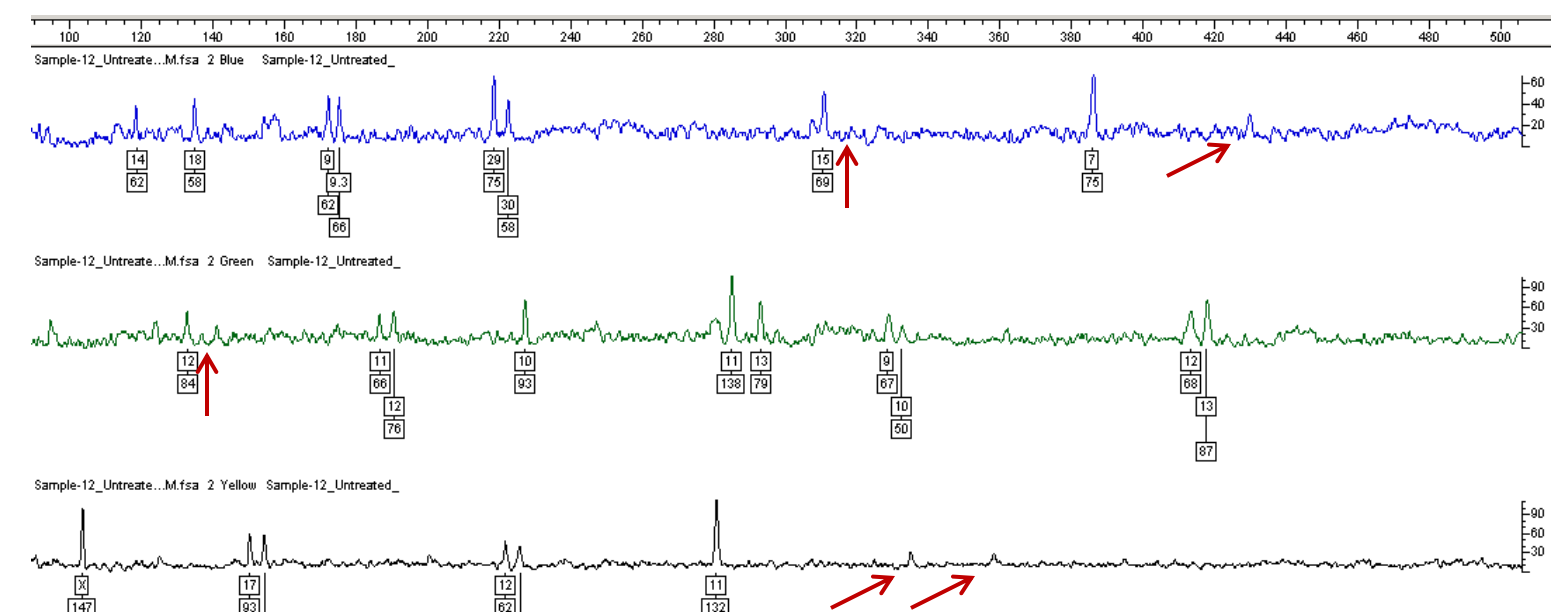


Amplicon Rx™ RFU Boost

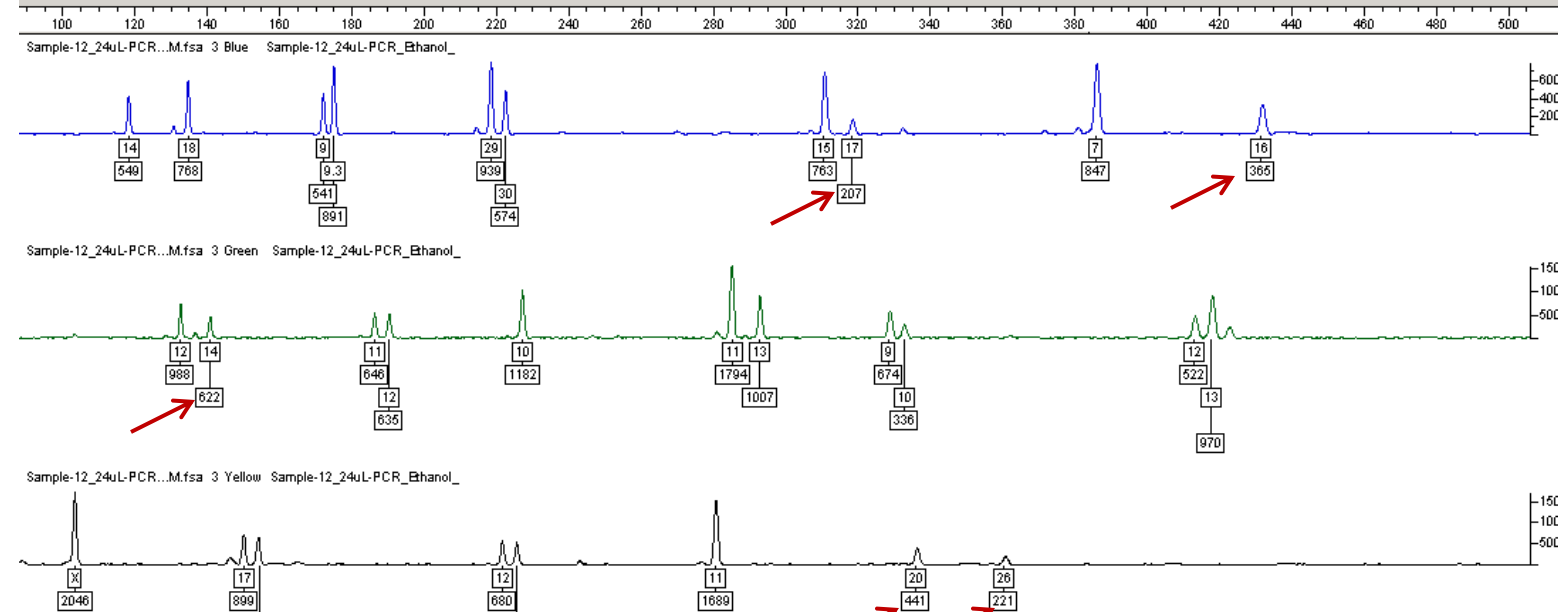
| | PowerPlex 16 | Identifiler |
|-------------|--------------|-------------|
| 6.25 µL PCR | x 3 - 5 | x 3 - 5 |
| 12.5 µL PCR | x 7 - 10 | x 7 - 10 |
| 25.0 µL PCR | x 13 - 20 | x 13 - 20 |

Casework Samples

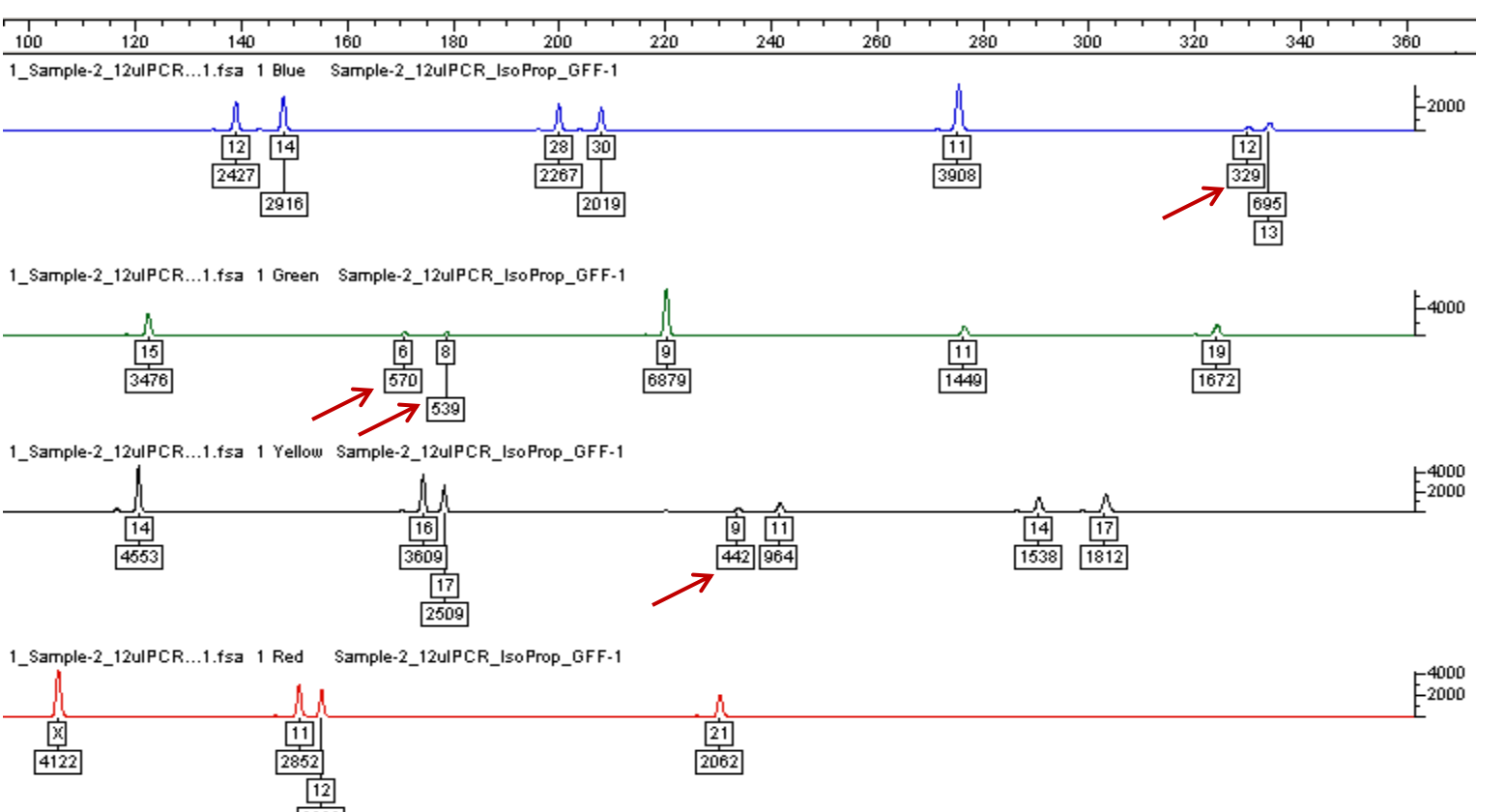
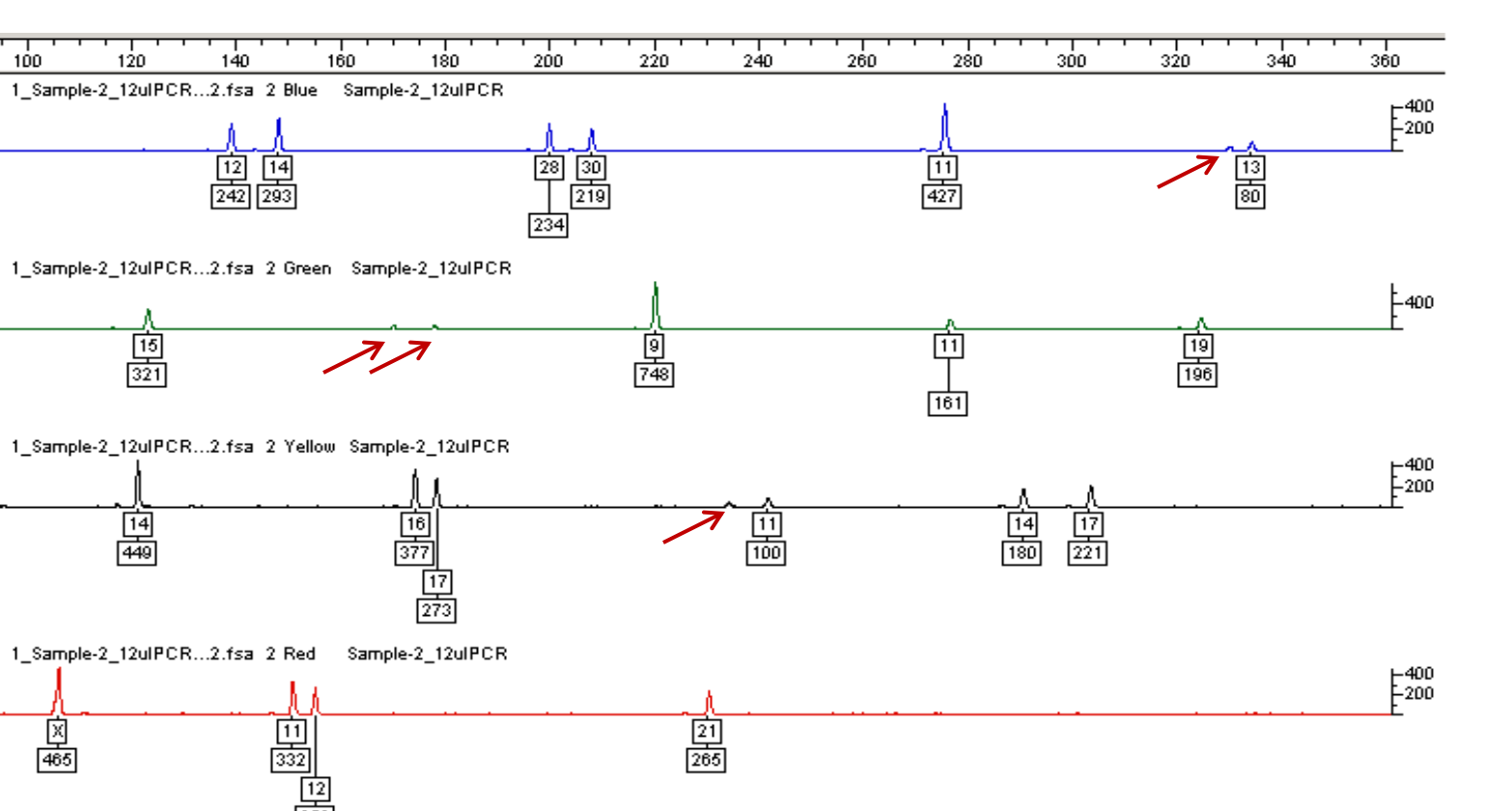
Before **Amplicon Rx™**



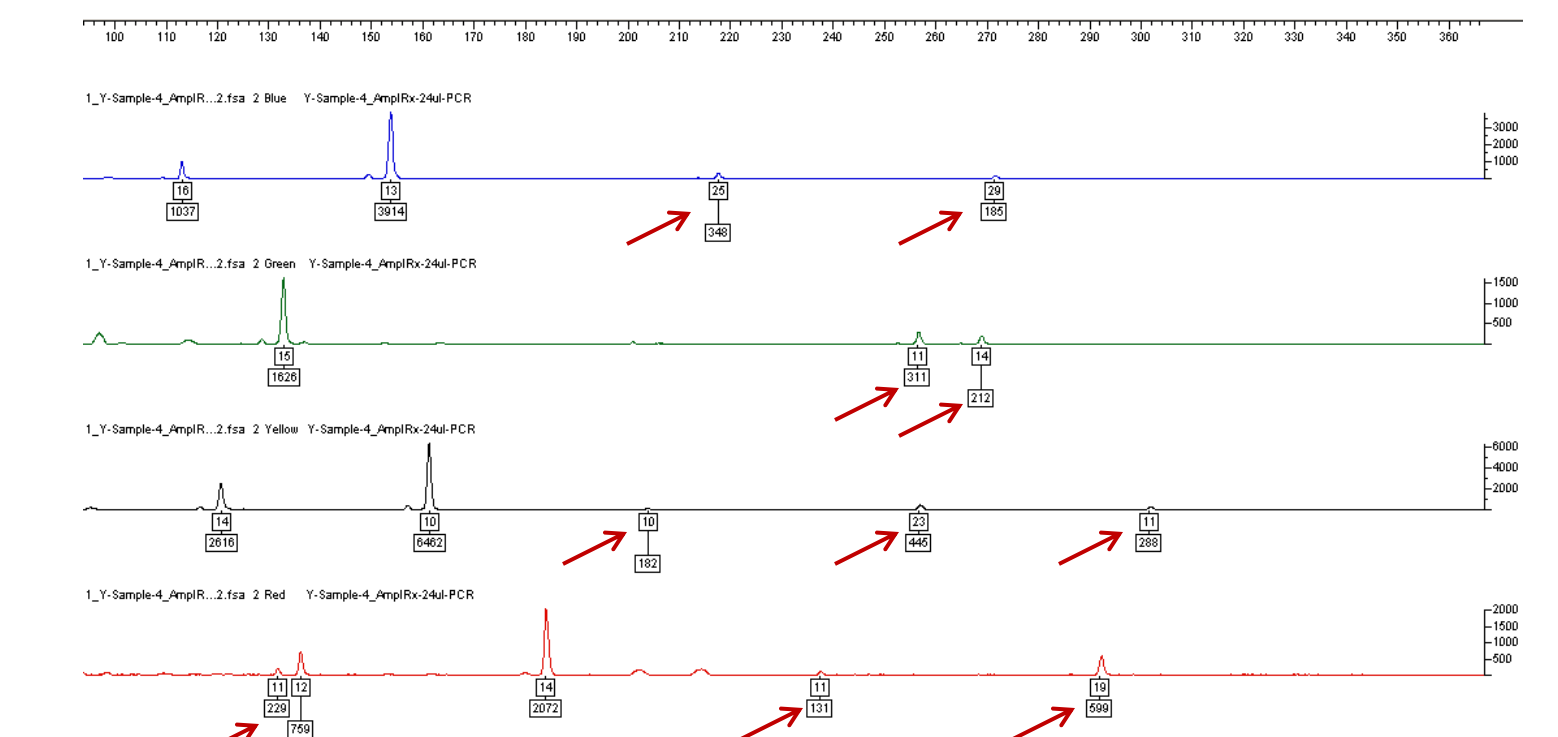
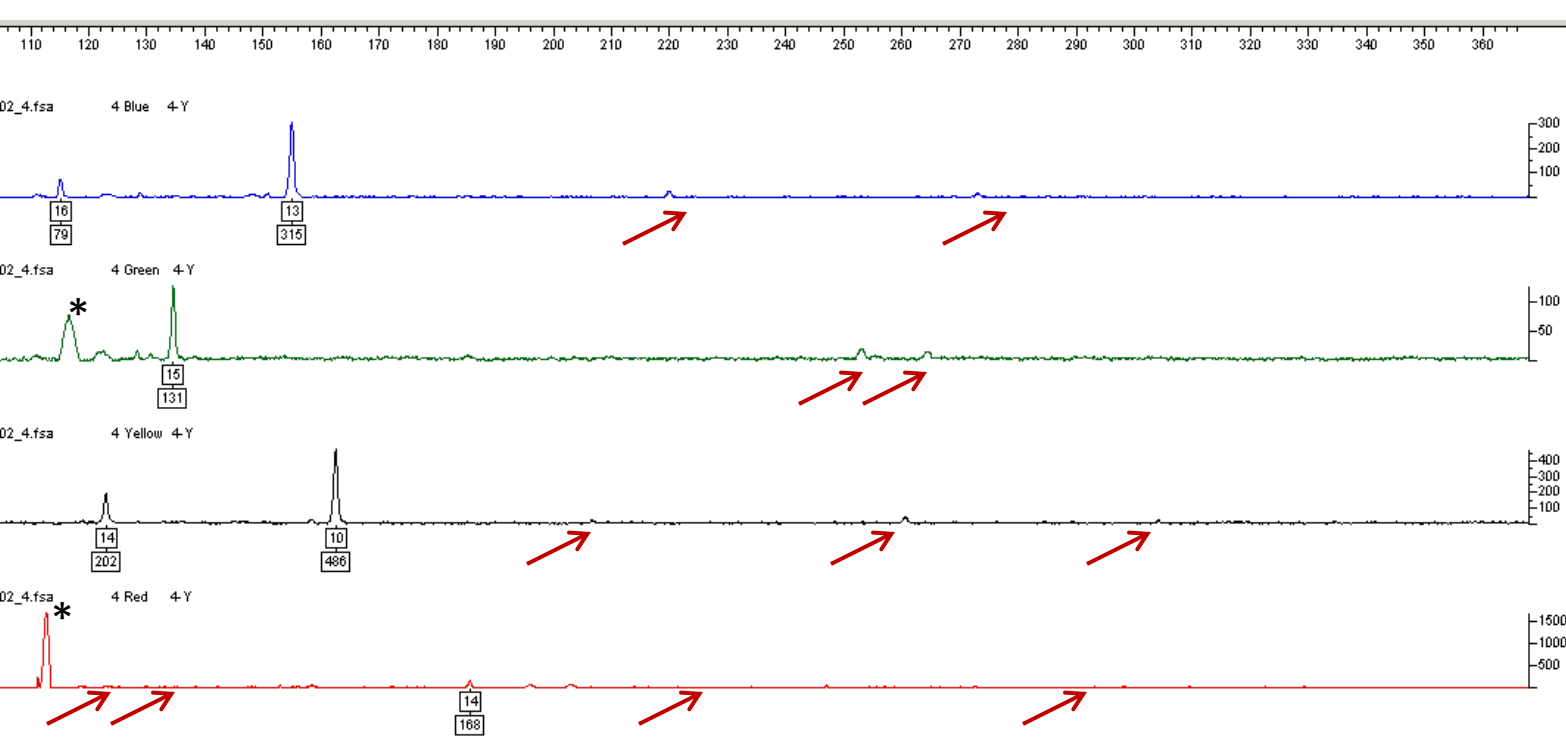
After **Amplicon Rx™**



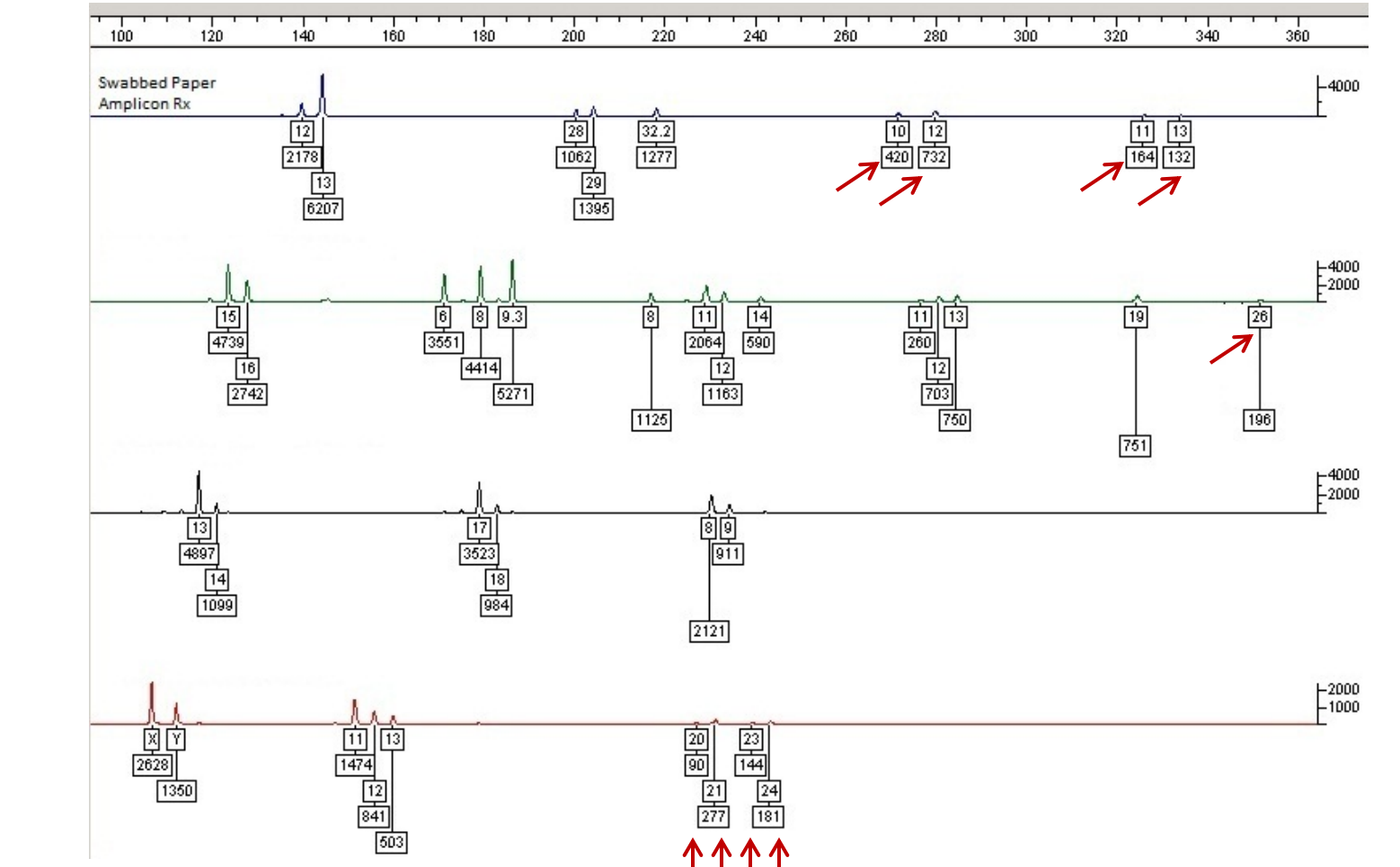
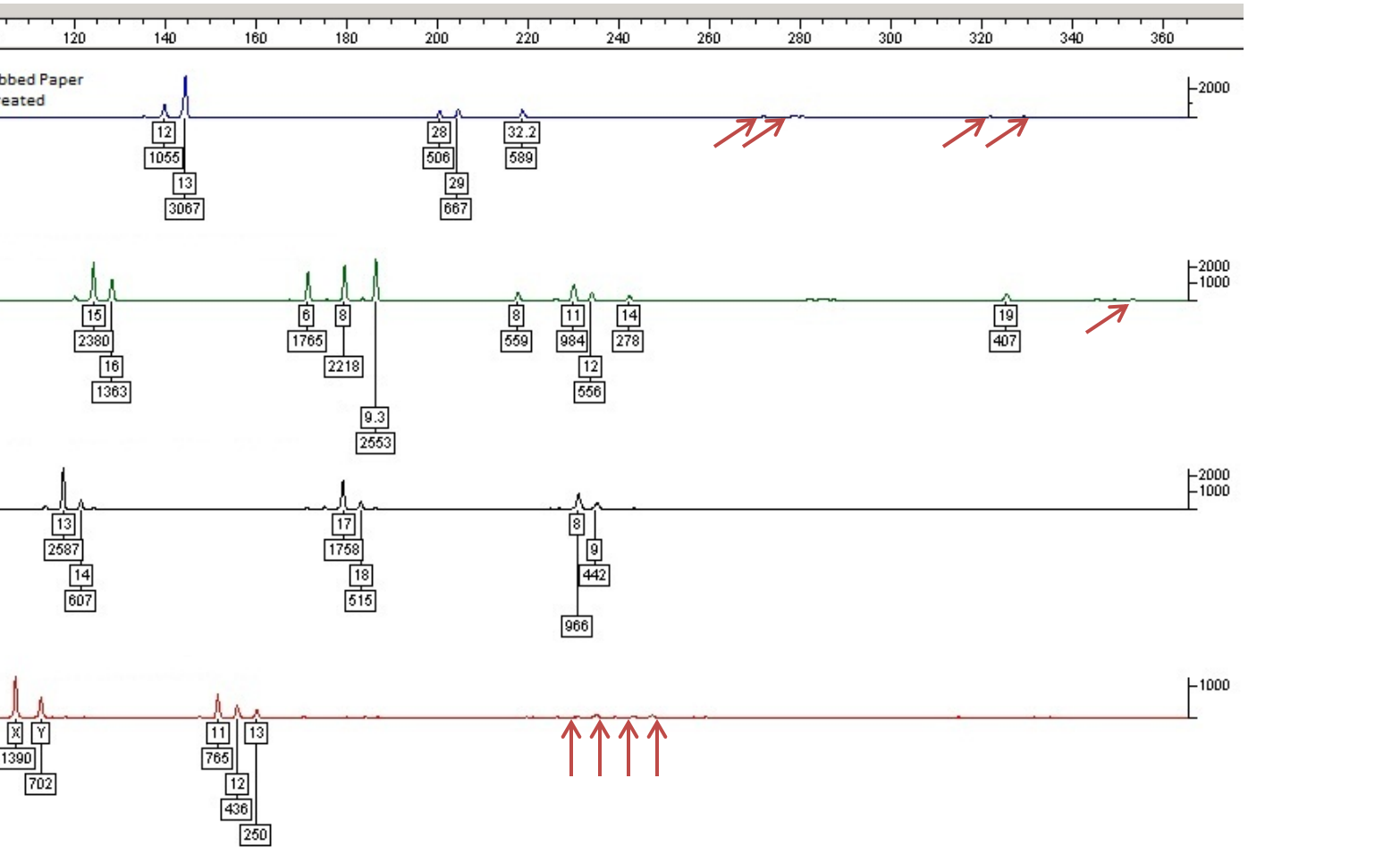
PowerPlex16 sample.



Identifiler sample.



Y-filer sample (* - dye blob artifacts)



Multiple contributor sample (Identifiler)