

Performance Check of running 3500 Anode Buffer on 3130 Instrument
Kira Bruner June 23rd, 2023

Background

The 3130 capillary instruments went end of use December 31st, 2022. Applied Biosystems (ABI) stopped production and sale of the 3130 consumable reagents in 2022. With the end of use of these instruments, Idaho State Police Forensic Services has sped up the validation of the new 3500 capillary instruments. However, until both Casework and Database can put their 3500s into service, both sections are continuing to run on the 3130s. While there are third party suppliers that sell Anode Buffer made for use with the 3130s, for continuity the unit wishes to use the ABI reagents. After confirmation from Applied Biosystems that the 3500 buffer is the same buffer as the 3130 buffer, just packaged differently, it was decided to use the 3500 buffer on the 3130s.

Objective

To performance check that the 3500 Anode Buffer will produce similar results as the 3130 Buffer when used on the 3130s.

Method

The 3500 Anode Buffer is packaged in a pre-diluted plastic container, whereas the 3130 Buffer needed to be made utilizing a stock bottle and nanopure water. The packaging differences are due to how ABI now makes the reagent and to provide ease of installing the buffer containers on the instrument without needing an analyst to make it fresh regularly. To utilize the 3500 Anode Buffer on the 3130, a new anode buffer container was brought to room temperature and gently mixed to ensure uniformity. The top plastic was removed from the anode buffer container and the buffer was poured directly into the two buffer containers on the 3130, the remainder was poured into a 50uL conical tube. The conical tube was then labeled with the lot number and expiration dates of the 3500 Anode Buffer. The buffer containers were then installed onto the 3130 (Jacques).

After installing the buffer, a plate was set up to be injected to confirm that the same results are obtainable with both buffers. The Casework plate 060523EMS was utilized. This plate had a positive control and a negative control. The remaining wells were filled with Allelic Ladder for a total of 4 samples injected. Samples were injected at 5 seconds. The reset plate was labeled 062323KNB_1.

The data from this injection was analyzed in GeneMapper ID v3.2.1 along with the data from the original injection of the 060523EMS data.

Results

The 062323KNB_1 data performed as expected. A comparison of the positive and negative control were made to those from plate 060523EMS and there were no differences in allelic calls, though some differences in RFUs which is to be expected as the amplified product had been stored for over two weeks.

Conclusion

The 3500 Anode Buffer performed the same as the 3130 buffer and is fit for use on the 3130 capillary instruments.

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