



The Commonwealth of Massachusetts
Department of State Police



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DNA TESTING REPORT

CASE INFORMATION

Laboratory Case #: 22-03176 Lexington

Victim(s): N/A

Suspect(s): Brendan Reilly

Other(s): Joseph Carruthers

Report To: Trooper Christopher J. Murgo, MSP Middlesex County Detective Unit

Report Cc: ADA Graham Van Epps, Middlesex County District Attorney's Office

Report Date: November 10, 2022

Agency Case #: 2022-110-0252

Offense Type: Police Shooting

TESTING SUMMARY

Item #	Sample Description	Sample Analysis
3-1.2.1	Sample of knife handle - on road, Burlington Street	• STR only.

RESULTS

The DNA sample(s) were amplified using the Promega Powerplex® Fusion 6C System and electrophoresed on an Applied Biosystems 3500 and/or 3500x1 genetic analyzer for STR fragment analysis. The Promega Powerplex® Fusion 6C kit is utilized to profile twenty-six genetic loci plus Amelogenin (sex indicator): D3S1358, D1S1656, D2S441, D10S1248, D13S317, Penta E, D16S539, D18S51, D2S1338, CSF1PO, Penta D, TH01, vWA, D21S11, D7S820, D5S818, TPOX, D8S1179, D12S391, D19S433, SE33, D22S1045, DYS391, FGA, DYS576, and DYS570.

STR DNA profiles were generated for the following exemplar sample(s):

Item # 8-1.1.1 Brendan Reilly

1. Item # 3-1.2.1: Sample of knife handle - on road, Burlington Street

The STR DNA profile is a mixture, including male DNA. Assuming two contributors:

- The DNA profile from this item is at least 17 octillion times more likely if the DNA profile originated from Brendan Reilly and an unknown individual than if it originated from two unknown individuals, unrelated to Brendan Reilly. This provides support for an inclusion.

CODIS DISPOSITION

Item #	Description	Upload Status	Suitable for comparison	Comments
3-1.2.1	Sample of knife handle - on road, Burlington Street (contributor 1)	No Upload	Yes	Ineligible

ADDITIONAL COMMENTS

1. The remaining biological evidence for the item(s) tested will be retained indefinitely at the laboratory.
2. The National Institute of Standards and Technology's published database is utilized in the statistical calculations. Hill, C.R., Duewer, D.L., Kline, M.C., Coble, M.D., Butler, J.M. (2013) U.S. population data for 29 autosomal STR loci. *Forensic Sci. Int. Genet.* 7: e82-e83. Revised data received on August 10, 2017.
3. STRmix software V2.5.11 was utilized.
4. STR profile interpretation and statistical analysis is performed with STRmix software.
5. STRmix calculates a likelihood ratio (LR) statistical calculation using competing hypotheses (i.e. the reference contributed to the DNA profile rather than an unknown individual contributed to the DNA profile, unrelated to the reference).
6. The likelihood ratios referenced in this report are based upon a range of propositions that can explain the evidence. Either interested party to this case, prosecution and/or defense, may request one additional likelihood ratio that incorporates an additional proposition more accurately representing their position. All requests must be submitted in a timely manner, must be reasonable given the test results, and must be within the capability and validated application of the program used.
7. STR statistical results represent the most conservative of the values calculated for four population groups: African American, Asian, Caucasian, and Hispanic.
8. Comparative analysis requires the submission of the appropriate standard(s).
9. If further analysis is required, please contact the Case Management Unit at (978) 451-3440.

SIGNATURE

This report reflects the test results, conclusions, interpretations, and/or the findings of the analyst as indicated by the signature below. Reported results relate only to the items tested, sampled, certified, calibrated, or data processed. Information regarding any items which the laboratory collected or created and preserved for future testing is available upon request.



Alexandra E. Hanley

Forensic Scientist II

Massachusetts State Police Crime Laboratory

This report was electronically signed using password protected software.

STR Likelihood Ratio Interpretation Table

Item #	Sample Description	DNA Profile Description	Reference(s) for Comparison	Hypothesis/Interpretation	Statistical Weighting
3-1.2.1	Sample of knife handle - on road, Burlington Street	Mixture of two contributors	Brendan Reilly	H₁: Brendan Reilly is included as a contributor H ₂ : Brendan Reilly is not included as a contributor	17 octillion (in favor of H ₁)