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IN THE SUPERIOR COURT
FOR THE
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS)	CRIMINAL CASE NO. 16-0011
)	
Plaintiff,)	
)	ORDER DENYING DEFENDANT'S
v.)	MOTION IN LIMINE
)	
JOHN SANTOS ALDAN)	
)	
Defendant.)	
)	
)	

I. INTRODUCTION

This matter came before the Court on April 24, 2017 at 9:00 a.m. in Courtroom 217A on Defendant's Notice of Motion, Motion, and Memorandum in Support of Motion in Limine and for a Daubert Hearing ("Defendant's Motion in Limine").¹ Defendant John Santos Aldan ("Defendant") appeared under the custody of Department of Corrections ("DOC") and was represented by Assistant Public Defender Cindy Nesbit. Chief Public Defender Douglas Hartig was also present. The Commonwealth was represented by Assistant Attorney General Teri Tenorio.

Based on a review of the parties' filings, oral arguments and applicable law, the Court hereby **DENIES** Defendant's Motion in Limine.

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¹ The motion hearing concluded on April 25, 2017.

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II. BACKGROUND

In this matter, the Commonwealth filed an Information charging Defendant with one count of Disturbing the Peace, one count of Assault & Battery, and one count of Sexual Assault in the First Degree. The circumstances surrounding the instant motion began in February of 2016.

On February 8, 2016, a sexual assault examination was performed on R.S., the alleged victim, after claims that Defendant drove her to a remote jungle area and forcibly penetrated her vagina with his penis. The undergarments worn by R.S. at the time of the sexual assault, oral and vulva swabs from the sexual assault kit, as well as buccal swabs obtained from Defendant were submitted to Bode Cellmark Forensics for DNA testing.

Christina H. Nash, a DNA analyst from Bode Cellmark Forensics, examined the above-mentioned items by conducting a Y-STR DNA analysis using a PowerPlex Y23 kit, the US Y-STR Database and statistical methodology. Y-STR testing examines short tandem repeats on the Y-chromosome. The PowerPlex Y23 kit amplifies the Y-chromosome and allows analysts to examine 23 points of comparison. The resulting DNA profile indicated that Defendant, along with his paternal relatives and an unknown number of the general population, could not be excluded as possible contributors of the tested DNA samples. The DNA profile was subsequently compared to 5,259 DNA profiles in the US Y-STR Database. In conducting a statistical analysis utilizing the counting method and a 95% confidence interval, Ms. Nash found that the resulting DNA profile was not expected to occur more frequently than one in every: 1,297 African-American Males; 649 Asian Males; 1,479 Caucasian males; 952 Hispanic males; and 882 Native American Males.

On April 6, 2017, Defendant filed the instant motion to preclude the introduction of the Y-STR DNA evidence and related testimony pursuant to the Commonwealth Rules of Evidence and principles set forth in *Daubert v. Merrell Down Pharmaceuticals, Inc.*, 508 U.S. 579 (1993). Defendant also argued that a *Daubert* hearing should be held to determine the admissibility of the

1 DNA evidence and requested that Defendant's expert, Dr. Philip B. Danielson, be allowed to testify
2 via video conferencing.

3 On April 11, 2017, the Court held a Pretrial Conference to discuss various matters,
4 including the instant motion.² Ultimately, the Court granted the Commonwealth's request for
5 additional time to confer with their expert and adequately respond to Defendant's Motion in
6 Limine. Subsequently, the parties stipulated to the briefing schedule below.

7 On April 21, 2017, the Commonwealth filed a Response in Opposition of Defendant's
8 Motion in Limine ("Commonwealth's Opposition"). Therein, the Commonwealth argued that the
9 Court should allow admission of the DNA evidence and testimony because: (1) Y-STR DNA data
10 is based on reliable methodology; (2) expert testimony satisfied Rule 702 of the Commonwealth
11 Rules of Evidence and *Daubert* requirements; (3) Y-STR DNA evidence is admissible pursuant to
12 CMC §1319; and (4) differing expert opinions go to the weight of evidence, not its admissibility.
13 The Commonwealth also argued that a *Daubert* hearing was not necessary.

14 On April 24, 2017, the Defendant filed a Reply to the Government's Response in
15 Opposition of Motion in Limine and for a *Daubert* Hearing ("Defendant's Reply"). Therein,
16 Defendant argued that: (1) a *Daubert* hearing is necessary to test the reliability of the scientific
17 method as applied in this case; and, (2) the statistical methodology, as applied to this case, is fatally
18 flawed.

19 The Court granted Defendant's request for a hearing to determine the admissibility of DNA
20 evidence and expert testimony related to Y-STR DNA evidence. On April 24, 2017, the Court heard
21 testimony from Defendant's expert witness, Dr. Phillip B. Danielson. In consideration of Dr.
22 Danielson's education and experience, and without objection from opposing counsel, the Court
23 qualified Dr. Danielson as a forensic DNA expert. In general, Dr. Danielson testified as to the

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25 ² In the Court's Pre-Trial Order dated February 13, 2017, the Court ordered the parties to file any pre-trial motions in a
timely fashion to allow the motions to be heard during the scheduled Pre-trial Conference on April 11, 2017. While the
Court considered April 6, 2017 untimely because it did not allow opposing counsel the opportunity to respond, the
Court excused the late filing as it stemmed from delays beyond Defendant's control.

1 basics of DNA testing and limitations of Y-STR testing. On April 25, 2017, the Court heard
2 testimony from the Commonwealth's expert witness, Ms. Nash. In consideration of Ms. Nash's
3 education and experience, and without objection from opposing counsel, the Court qualified Ms.
4 Nash as a forensic DNA expert. In general, Ms. Nash testified as to the methodology of the Y-STR
5 testing and her findings in the instant matter.

6 III. LEGAL STANDARD

7 DNA evidence is admissible pursuant to 6 CMC § 1319 and Rule 702 of the
8 Commonwealth Rules of Evidence ("Rule 702").

9 Section 1319 governs the admissibility of a DNA profile. Specifically, section 1319 states,
10 "evidence of a DNA profile is admissible to prove or disprove any relevant fact, if the court finds
11 that the technique underlying the evidence is *scientifically valid*." 6 CMC § 1319 (emphasis added).
12 Evidence is relevant if: "(a) it has a tendency to make a fact more or less probable" and "the fact is
13 of consequence in determining the action." NMI R. Evid. 401. Moreover, "[t]he court may exclude
14 relevant evidence if its probative value is substantially outweighed by . . . unfair prejudice,
15 confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting
16 cumulative evidence." NMI R. Evid. 403.

17 Rule 702 governs the admissibility of testimony by an expert witness. Rule 702 states:

18 A witness who is qualified as an expert by knowledge, skill, experience,
19 training, or education may testify in the form of an opinion or otherwise if:

- 20 (a) The expert's scientific, technical, or other specialized knowledge will
help the trier of fact to understand the evidence or to determine a fact in
21 issue;
22 (b) The testimony is based on sufficient facts or dates;
(c) The testimony is the product of reliable principle and methods; and
(d) The expert has reliability applied the principles and method to the facts
23 of the case.

24 NMI R. Evid. 702.

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1 methods, as applied to this particular case, preclude admissibility. For the reasons set forth below,
2 the Court disagrees.

3 **A. The Y-STR DNA Evidence was Based on a Scientifically Valid Technique.**

4 As a preliminary note, there are numerous types of DNA testing or analysis, such as: (1)
5 autosomal testing; (2) mitochondrial testing; and, (3) STR testing. The use and application of each
6 type of testing varies. Y-STR testing, is a subcategory of STR testing, which analyzes the short
7 tandem repeats on the Y-chromosome. Given that the Y-chromosome is exclusive to the male
8 genome, Y-STR testing is useful when analyzing a mixture of male and female DNA samples in
9 sexual assault cases. Specifically, use of the Y-STR testing allows for the targeted amplification of
10 male DNA, even in mixed DNA samples where female DNA is dominant. However, Y-STR testing
11 is not without its limitations. Since the Y-chromosome's genome remains unchanged during
12 meiosis, a male will exhibit the same Y-STR profile as all of his paternal relatives, barring any
13 mutational events.

14 Conventional DNA analysis requires a four step process: (1) collection or extraction; (2)
15 quantification; (3) amplification; and, (4) sorting and separation. During the collection or extraction
16 step, certain chemicals are used on a sample to break open the cells to extract DNA. During the
17 quantification step, the examiner must determine the quantity of available DNA from the sample.
18 During the amplification step, the examiner will make copies of relevant areas of DNA using
19 polymerase chain reaction. During the sorting or separation step, a genetic analyzer is used to
20 organize DNA by size and generate a DNA profile.

21 In Y-STR DNA analysis, the first two steps are same as conventional DNA analysis.
22 However, during the amplification step, the process differs by utilizing a scientific kit that seeks out
23 the Y-chromosome. During the amplification process, Ms. Nash utilized the PowerPlex Y23 kit.
24 The PowerPlex Y23 kit amplifies 23 points of comparison, or loci, on the Y-chromosome. Ms.
25 Nash testified that the PowerPlex Y23 kit is the most discriminatory Y-STR kit. Additionally, Ms.

1 Nash testified that the PowerPlex Y23 kit was subjected to validation studies, by both the
2 manufacturer and Bode Cellmark Forensics, and peer reviewed by appropriate authorities in the
3 scientific community. While Defendant argues that Y-STR testing has low discriminatory power in
4 comparison to the autosomal testing, Defendant does not combat the validation studies or peer
5 reviews of the PowerPlex Y23 kit.

6 Following the amplification step, a DNA profile is generated. A DNA analyst must compare
7 the resulting DNA profile to the DNA sample of the suspect. If the patterns of the DNA profile and
8 the DNA sample are not the same, the suspect can be excluded as a possible contributor. According
9 to Dr. Danielson, any Y-STR testing that results in the failure to exclude a suspect as a donor must
10 be associated with a statistic that conveys the rarity of that forensic profile within the population.
11 To do so, the DNA profile is cross-referenced against a database of known samples to generate a
12 statistical estimate of the probability that the profile would be observed randomly among certain
13 populations. For Y-STR testing, a random match statistic is calculated using the counting method,
14 which takes into account the number of times the profile occurs within a given database in relation
15 to the total number of profiles contained within that database. Ms. Nash testified that this method is
16 ideal for forensic application because it provides very conservative estimates of randomness,
17 especially when combined with upper confidence intervals of 95% to account for database size and
18 sampling variation.

19 Here, the resulting DNA profile indicated that Defendant, along with his paternal male
20 relatives and an unknown number of the general population, could not be excluded as a possible
21 contributor of the tested DNA samples. The DNA profile was compared to 5,259 DNA samples in
22 the US Y-STR Database. Using the counting method and a 95% confidence interval. Ms. Nash
23 found that the DNA profile was not expected to occur more frequently than one in every: 1297
24 African-American Males; 649 Asian Males; 1479 Caucasian males; 952 Hispanic males; and 882
25 Native American Males.

1 In the instant matter, there is no showing that the protocols and procedures associated with
2 the Y-STR test results deviated from controlling scientific authority. Moreover, the DNA profile
3 and statistic were compiled after using the most discriminatory Y-STR test available, a national
4 database and statistical methodology. Accordingly, the Court finds that the Y-STR DNA Profile
5 was based on a scientifically valid technique.

6 **B. Y-STR DNA Evidence is Widely Accepted in Other Jurisdictions.**

7 Y-STR DNA testing is not a novel concept or technique in the scientific community.
8 Additionally, despite its known limitations in identifying a specific person, challenges to the
9 admissibility of Y-STR evidence have generally been unsuccessful in other jurisdictions.³

10 In *Shabazz v. State*, the Appellate Court found that the testimony established that Y-STR
11 DNA testing is merely one type of STR DNA testing to be accepted as valid in Georgia. 265 Ga.
12 App. 64, 65, (2004). In *Curtis v. State*, the Appellate Court found that the Y-STR evidence was
13 reliable and relevant because the methodology was validated internally and externally, subjected to
14 peer review, generally accepted in the scientific community. 205 S.W.3d 656, 661 (Tex. App.
15 2006). In *People v. Stevey*, the Appellate Court found that a hearing to determine the admissibility
16 of Y-STR evidence is not necessary because “Y-STR testing is generally accepted in the scientific
17 community as a valuable tool in evaluating DNA in mixed-source cases.” 209 Cal.App.4th 1400,
18 1415 (Cal.Ct. App. 2012).

19 The persuasive authority set forth above supports the finding that Y-STR DNA evidence is
20 admissible pursuant to 6 CMC § 1319. Moreover, the persuasive authority supports the relevance
21 and reliability of Y-STR DNA evidence.

22 **C. The Statistical Methodology of Y-STR DNA Testing is reliable.**

23 As discussed above, the Y-STR DNA profile was compared to 5,259 DNA profiles in the
24 US Y-STR Database. Using the counting method, and a 95% confidence interval to account for

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³ During oral arguments, Defendant conceded to the reliability and admissibility of Y-STR evidence on the mainland United States.

1 database size and sampling variation, Ms. Nash found that the DNA Profile was not expected to
2 occur more frequently than one in every: 1,297 African-American Males; 649 Asian Males; 1,479
3 Caucasian males; 952 Hispanic males; and 882 Native American Males.

4 Both experts testified that the US Y-STR Database is a compilation of approximately 35,660
5 DNA profiles collected from various sources. While Bode Cellmark Forensics utilizes this national
6 database, Bode Cellmark Forensics does not maintain or control the samples. Of the 35,660 DNA
7 profiles, approximately 5,259 profiles contained 23 points of comparison for cross-referencing
8 purposes. When samples are donated, donors must self-select their ancestry. There is no option to
9 select the Chamorro, Carolinian or Micronesian descent. The DNA profiles are limited to five
10 ancestries consisting of: (1) 9,581 African American males; (2) 4,291 Asian males; (3) 11,003
11 Caucasian males; (4) 6,414 Hispanic males; and, (5) 4,371 Native American. Each ancestry is
12 further categorized into subdivisions. For example, the 4,291 Asian samples are further divided into
13 subdivisions, such as: (1) Arabic; (2) Chinese; (3) Filipino; (4) Indian; (5) Jordanian; (6) Middle
14 East; (7) Oriental; (8) Southern Indian; and, (9) Vietnamese. There was no information provided as
15 to the percentages of each subdivision.

16 Here, Defendant argues that the statistical methodology, as applied to this case, is fatally
17 flawed and unreliable for two reasons. First, Defendant argues that the US Y-STR Database is not
18 reflective of the Commonwealth population and does not include DNA samples identified as
19 Chamorro, Carolinian, or Micronesian descent. Second, Defendants argues that the counting
20 method cannot account for the deficiency in the sample population. In support of his arguments,
21 Defendant cites to *Com. v. Lally*, 46 N.E.3d 41, 52 (2016) and *Commonwealth v. Crisostomo*, Crim.
22 No. 13-0049 (NMI Super. Ct. Mar. 14, 2014) (Order Granting In Part Motion to Exclude
23 Mitochondrial DNA Test Results and Expert Testimony).

24 First, courts in other jurisdictions have found the counting method and smaller, or less
25 representative, databases to be reliable. *See People v. Tunis*, 318 P.3d 524, 528-529 (Colo. Ct. App.

1 2013). In *Tunis*, the defendant was convicted sexual assault based, in part, on Y-STR evidence that
2 utilized the counting method and YFiler Database. *Id.* at 524. On appeal, the defendant argued that
3 small size of the database used to generate the exclusion statistic rendered the statistic unreliable.
4 *Id.* at 529. In finding the counting method reliable, the *Tunis* Court relied on testimony indicating
5 that the counting method constituted “general statistical methods that are used in several different
6 fields,” by various laboratories and that the database consisting of a 3,500 samples is “commonly
7 used.” *Id.* Additionally, the *Tunis* Court considered decisions from other jurisdictions that upheld
8 the counting method and found the YFiler Database reliable. *Id.* citing *State v. Calleia*, 997 A.2d
9 1051, 1064 (App. Div. 2010) (Y-STR testing, including the YFiler Database, is generally accepted
10 in the scientific community and therefore admissible); also *State v. Bander*, 208 P.3d1242, 1255
11 (2009) (hearing on the use of counting method in Y-STR analysis is unnecessary, in part, because it
12 is generally accepted in scientific community).

13 Second, *Lally* does not support Defendant’s argument. As a preliminary matter, *Lally* does
14 not discuss how the associated database would deem a DNA profile or its statistical weight
15 unreliable. Instead, the relevant discussion was limited to whether the counting method provided
16 the required context for jury to evaluate the significance of the DNA result. *Lally*, 46 N.E.3d 41, 52-
17 53. Also, the standard for admissibility of DNA evidence in *Lally* is different from the
18 Commonwealth of the Northern Mariana Islands. In *Lally*, nonexclusion DNA evidence must be
19 presented with “reliable accompanying evidence as to the likelihood that the test could not exclude
20 other individuals in a given population so that the jury can evaluate the meaning of the result.” *Id.* at
21 52. Here, accompanying evidence is not required and admissibility hinges on whether the technique
22 underlying the evidence is scientifically valid pursuant to 6 CMC §1319. Moreover, the court in
23 *Lally* found that “the counting method was not unreliable, nor was it likely to mislead jurors into
24 thinking that the probability of another person contributing the male DNA . . . was diminutive.” *Id.*

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1 at 53. Therefore, based on the findings in *Lally*, the counting method and 95% confidence interval
2 is reliable.

3 Third, there is no scientific or legal showing that the US Y-STR Database or statistical
4 analysis would render the Y-STR DNA evidence unreliable. This Court does not discount
5 Defendant's arguments, nor the rationale set forth in *Crisostomo*. However, the Court finds that the
6 statistical weight as to the rarity or randomness of a profile based on the US Y-STR Database and
7 counting method should go to the weight of the evidence—not the admissibility evidence. *See*
8 *People v. Holtzer*, 660 N.W.2d 405, 411 (2003); *see also People v. Cooper*, 53 Cal.3d. 771, 814
9 (1991). Exclusion of conclusions based on sound methodology is not the proper course; rather,
10 “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the
11 burdens of proof are the traditional and appropriate means of attacking shaky but
12 admissible evidence.” *Daubert*, 509 U.S. at 596. When ruling in favor of the above argument, one
13 court illustrated that shoe imprint evidence provides the best analogy to Y-STR DNA evidence
14 because “[o]ur courts have long admitted evidence connecting the shoe imprints found at a crime
15 scene with shoes found in a defendant's possession, despite the fact that any number of persons
16 might own identical pairs of shoes.” *State v. Calleia*, 997 A.2d 1051, 1066 (App. Div. 2010).

17 Accordingly, the Court finds that the statistical methodology of Y-STR Testing is reliable.

18 **D. The DNA Evidence is not Precluded by Rule 403 of the Commonwealth Rules of**
19 **Evidence.**

20 Defendant argues that the evidence is inadmissible pursuant to Rule 403 of the
21 Commonwealth Rules of Evidence (“Rule 403”). Defendant does not set forth any specific
22 arguments. Rule 403 states that “[t]he court may exclude relevant evidence if its probative value is
23 substantially outweighed by a danger of . . . unfair prejudice, confusing the issues, misleading the
24 jury, undue delay, wasting time, or needlessly presenting cumulative evidence.” NMI R. Evid. 403.

25 The Court finds that the DNA evidence is not precluded by Rule 403 for three reasons. First,
the DNA analysis was properly documented and performed in compliance with established

1 procedures that are widely accepted in the scientific community. Second, the DNA evidence shows
2 that Defendant and his paternal relatives cannot be excluded from a connection with the DNA
3 samples submitted to Bode Cellmark Forensics. *See United States v. Hicks*, 103 F.3d 837, 846 (9th
4 Cir. 1996) (The probative value of nonexclusion DNA results was not substantially outweighed by
5 prejudice to defendant, despite low statistical probability that the defendant contributed to the
6 sample); *see also U.S. v. Morrow*, 374 F.Supp.2d 51 (D.D.C 2005) (DNA evidence was admissible
7 despite relatively low probative value). Third, “[w]here the [trial] court provides careful oversight,
8 the potential prejudice of the DNA evidence can be reduced to the point where this probative value
9 outweighs it.” *United States v. Chischilly*, 30 F.3d 1144, 1158 (9th Cir. 1994).

10 **E. Expert Testimony is admissible pursuant to Commonwealth Rules of Evidence.**

11 Defendant moves to preclude the expert testimony relating to the Y-STR DNA analysis
12 conducted by Ms. Nash. The admissibility of expert testimony is governed by Rule 702, which
13 states:

14 A witness who is qualified as an expert by knowledge, skill, experience,
15 training, or education may testify in the form of an opinion or otherwise if:

- 16 (a) The expert’s scientific, technical, or other specialized knowledge will
help the trier of fact to understand the evidence or to determine a fact in
issue;
17 (b) The testimony is based on sufficient facts or data;
18 (c) The testimony is the product of reliable principle and methods; and
(d) The expert has reliably applied the principles and method to the facts
of the case.

19 NMI R. Evid. 702.

20 Here, the Court heard testimony as to Ms. Nash’s education, knowledge, training and
21 professional experience in the field of forensic DNA. Ms. Nash, who has achieved advanced
22 degrees related to forensic DNA and microbiology, has been employed as a DNA analyst by Bode
23 Cellmark Forensics for the last two years and eight months. In the course of her employment, Ms.
24 Nash has conducted DNA testing and analysis on numerous cases. Moreover, Ms. Nash was
25 previously certified as an expert in her field in other jurisdictions. As such, based on her

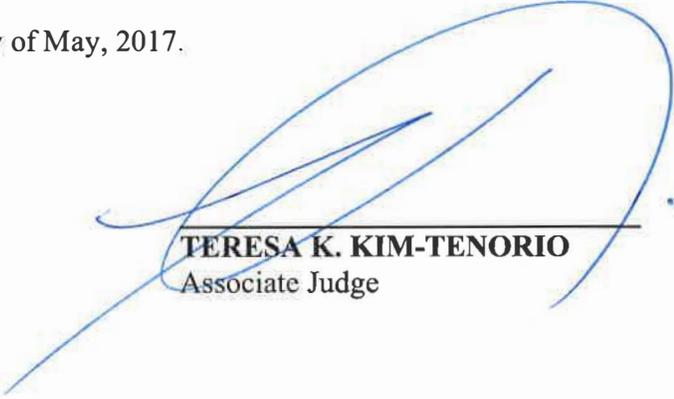
1 knowledge, skill, experience, and education, the Court qualifies Ms. Nash as an expert in the field
2 of forensic DNA.

3 Ms. Nash testified to conducting the Y-STR DNA analysis on the four samples provided to
4 Bode Cellmark Forensics according to scientifically accepted principles and methods. Based on her
5 analysis, Ms. Nash concluded that Defendant, along with his paternal male relatives, could not be
6 excluded as a possible contributor of the DNA sample. Ms. Nash's conclusion was supported by the
7 most discriminatory Y-STR test, a national database, and statistical methodology. Based on above,
8 the Court finds that Ms. Nash's testimony satisfies the requirements set forth in Rule 702.

9 **V. CONCLUSION**

10 Based on the foregoing, Defendant's Motion in Limine is hereby **DENIED**.

11
12 **SO ORDERED** this 12th day of May, 2017.

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16 **TERESA K. KIM-TENORIO**
17 Associate Judge