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ALAN CARLSON, Clerk
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Deputy Clerk

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE CITY AND COUNTY OF SAN FRANCISCO

PEOPLE OF THE STATE OF CALIFORNIA,)
)
) Plaintiff)
 vs.)
)
) JACK BOKIN, et al.)
)
) Defendants.)

SCN: 168461
ORDER

For the past several months, this Court has been conducting hearings pursuant to People v. Kelly (1976) 17 Cal.3d 24, regarding the admissibility of certain DNA evidence in several pending criminal cases. The record covers more than 5,000 pages of testimony and a substantial number of articles and exhibits. Needless to say, the level of advocacy was keen from both sides of the presentation. In reaching its decision, this Court will not summarize the evidence presented, except where such is necessary to explain its decision. Naturally, the decision of the Court is based on the record presented by the parties. This is an issue which is ever-evolving, even as this Court determines the matter.

At the outset, it must be stressed that the test developed in Kelly is a conservative one. Id. at 31. This approach was necessary because "lay jurors tend to give considerable weight to 'scientific' evidence when presented by 'experts' with impressive credentials. We have acknowledged the existence of a misleading aura of certainty which often envelops a new scientific process, obscuring its currently experimental nature." Id. at 31-32, quoted in People v. Leahy (1994) 8 Cal.4th 587, 595. This care in receiving such scientific evidence will, in the eyes of the Supreme Court, allow for greater uniformity in the admission of evidence and consequently not allow the jury to consider evidence when the scientific discovery has yet to "cross the line between the experimental and demonstrable stage." People v. Kelly,

1 supra., 17 Cal.3d at 30. In this proceeding, the prosecution, the party seeking to admit the scientific
2 evidence, bears the burden of proof. People v. Morris (1991) 53 Cal.3d 152, 206. Under Section 115
3 of the Evidence Code, the burden which the prosecution must sustain is that of a preponderance of the
4 evidence. In People v. Ashmus, the Supreme Court specifically held this was the standard when
5 considering the admission of scientific evidence under Kelly. People v. Ashmus (1991) 54 Cal.3d 932,
6 970-71.¹

7 The actual scientific evidence which the prosecution wanted introduced in Kelly is
8 especially significant to this Court's decision. The issue in that case was whether voiceprint evidence was
9 sufficiently reliable. After reviewing the record and finding the prosecution had not satisfied its burden,
10 the Supreme Court reversed the trial court's determination. In its decision, the unanimous opinion by
11 Justice Richardson stressed "exercise of restraint is *especially warranted* when the *identification*
12 *technique* is offered to *identify* the *perpetrator* of a crime. 'When identification is chiefly founded upon
13 an opinion which is derived from utilization of an unproven process or technique, the court must be
14 *particularly careful to scrutinize the general acceptance of the technique.*' [Citation]" People v. Kelly,
15 17 Cal.3d at 32 (emphasis added). In light of Kelly, trial courts must contend with a conservative analysis
16 which is especially cautious when dealing with suspect identification when they undertake the issue
17 presented to the courts with DNA evidence.

18 Besides the language cited in Kelly, this Court also has the discussion of DNA evidence
19 presented in the recent, and lone, case on DNA by our Supreme Court, People v. Venegas (1998) 18
20 Cal.4th 47. In Venegas, the Supreme Court unanimously reversed a trial court's admission of DNA
21 statistical information because the FBI statistics did not comply with Kelly. Within the body of the
22 opinion, the Court discussed the qualitative difference between DNA evidence and other kinds of
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24 ¹ This is also the standard adopted by the United States Supreme Court in Daubert v. Merrell
25 Dow Pharmaceuticals, Inc. 509 U.S. 579, 592 (1993), citing Bourjaily v. United States, 483 U.S. 171,
26 175-176. See also In re Marriage of Peters, (1997) 52 Cal.App.4th 1487; In re Michael G. (1998) 63
27 Cal.App.4th 700.

1 evidence used to identify suspects of criminal conduct. Justice Baxter places in one category scientific
2 evidence such as sophisticated fingerprint comparison, blood spatter tests, and footprint analysis. He
3 points out that while Kelly may apply to such scientific information, lay jurors also have common sense
4 and are able to use the same and also physically observe the particular conclusion made by the expert
5 witness. On the other hand, "DNA evidence is different." Id. at 80-81. The scrutiny a trial court must
6 undertake in applying Kelly in DNA evidence is especially keen because the technical determinations of
7 experts cannot be seen by the jury "for themselves." Id. at 81.² The recognition in Venegas that DNA
8 is "different," is reflected in other portions of the opinion dealing with statistics and population genetics,
9 a feature which will be discussed later in this opinion.

10 Significant in determining whether particular scientific evidence has crossed from the
11 "twilight zone" of the experimental to the demonstrable for forensic purposes, is a recognition of general
12 acceptance. We know that regular use by law enforcement is not sufficient. People v. Leahy, supra., 8
13 Cal.4th at 606. As Kelly reminds us, "there has always existed a considerable lag between advances and
14 discoveries in scientific fields and their acceptance as evidence in a court proceeding." People v. Kelly,
15 supra., at 32. What is needed to establish "general acceptance" may not be always a bright line for all
16 scientific evidence. It certainly is not a prerequisite that the scientific community be unanimous in their
17 embrace of the principle forwarded for forensic purposes. People v. Guerra (1984) 37 Cal.3d 385, 418;
18 People v. Leahy, supra., at 612. However, to this Court, one factor which must be considered is
19 scientific validation.

20 Guidance in this regard can be found in the more liberal test announced by the United
21 States Supreme Court in Daubert v. Merrel Dow Pharmaceuticals, Inc. (1993) 509 U.S. 579 (hereinafter
22 Daubert). While this decision rejected the reasoning of Frye v. United States, 293 F. 1013 (D.C.Cir.

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24 ² While the portion of Venegas identified above dealt with prong three, this Court concludes the
25 language is equally important in assessing prong one. Each prong focuses on the process of admitting
26 evidence of identification. The degree of caution should not be different because a different prong is
27 being evaluated

1 1923), the case which Kelly adopts, the Supreme Court developed significant criteria which trial courts
2 must implement before they receive scientific evidence in federal court. The trial court must make
3 "preliminary assessment of whether the reasoning or methodology underlying the testimony is
4 scientifically valid and whether the reasoning or methodology properly can be applied to the facts in
5 issue." Daubert, supra., at 592-93. The scientific method is a validation technique, consisting of an
6 expert's hypothesis which then requires empirical validation. Imwinkelreid, "The Meaning of 'Facts or
7 Data' in Federal Rule of Evidence 703: the Significance of the Supreme Court's Decision to Rely on
8 Federal Rule 702 in Daubert v. Merrell Dow Pharmaceuticals, Inc." 54 Md.L.Rev. 352 (1995). Justice
9 Blackmun stressed the need for validation to determine whether the particular scientific methodology
10 which is being introduced at trial can be "falsified." Quoting Karl Popper, Blackmun wrote, "the criterion
11 of the scientific status of a theory is its falsifiability, or refutability, or testability." Daubert, supra., at 593.
12 Besides validation studies from the processor of the scientific methodology, another key consideration
13 is whether the theory or technique has been subjected to peer review or publication. This is a component
14 of good science because "it increases the likelihood that substantive flaws in methodology will be
15 detected. . . The fact of publication (or the lack thereof) in a peer reviewed journal thus is relevant, though
16 not dispositive, consideration in assessing the scientific validity of a particular technique or methodology
17 on which an opinion is premised." Daubert, supra., at 594. According to Daubert, scientific validation
18 of a particular methodology or process can originate in published laboratory studies or by the rigors of
19 peer review. To Blackmun, this is the process of discerning forensic truth, as opposed to laboratory
20 truth. Id. at 597-98.³

21 The process of scientific validation has been stressed in DNA cases. In 1995, the
22 "Guidelines for a Quality Assurance Program for DNA Analysis" were prepared by the Technical
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24 ³ In a subsequent decision, the United States Supreme Court cautioned that neither Daubert nor
25 the Federal Rules of Evidence permit the district court to admit expert opinion that depends only on the
26 "say-so" of the particular expert. There cannot be an analytical gap between the data and the opinion
27 offered. General Electric Company v. Joiner (1997) 522 U.S. 136, 118 S.Ct. 512, 519.

1 Working Group on DNA Analysis Methods (hereinafter TWGDAM), and a review of TWGDAM makes
2 clear that validation, both developmental and internal proficiency, are central. In section 4 of TWGDAM,
3 developmental validation is treated. Section 4.1.1 defines developmental validation as a process for the
4 scientific community at large to properly assess whether a particular procedure can “reliably obtain a
5 desired result, determine the conditions under which such results can be obtained and determine the
6 limitations of the procedure.” Developmental validation by its nature requires the critical aspects of a
7 procedure be carefully monitored and controlled. TWGDAM at 4.1.1. Particular studies in this regard
8 are specifically listed in section 4.1.5, with the requirement the results of developmental validation be
9 “shared as soon as possible with the scientific community. . . [I]t is imperative that details of these studies
10 be available for peer review through timely publications in scientific journals.” TWGDAM at 4.1.5.12.
11 What the laboratory learns through its developmental validation and how such is critically assessed by
12 the membership of the community at large is fundamental for the forensic use of DNA identification.

13 It is not enough the particular laboratory which developed a procedure which is marketed
14 engage in their own internal validation. The process of internal validation, detailed in section 4.5 of
15 TWGDAM, is totally different from the notion of developmental validation. See generally, Imwinkelreid,
16 “Coming to Grips with Scientific Research in Daubert’s ‘Brave New World’: the Court’s Need to
17 Appreciate the Evidentiary Differences Between Validity and Proficiency Studies,” 61 Brook.L.Rev.
18 1247 (1995); Imwinkelreid, “Proving the Case: The Science of DNA: The Case Against Evidentiary
19 Admissibility Standards that Attempt to ‘Freeze’ the State of a Scientific Technique,” 67 U.Colo.L.Rev.
20 887, 893 (1996). While the internal validation process, to this Court’s understanding, pertains to prong
21 three, the developmental validation requirements are basically prong one steps.

22 These TWGDAM guidelines are not forensically optional steps. They appear to reflect
23 the forensic scientific community’s consensus on what is appropriate. In determining the position of the
24 scientific community on prong one, this Court believes that failure to comply with TWGDAM would be
25 inappropriate practice.

26 It would therefore appear that the failure to either detail the developmental validation of
27 a particular procedure or, alternatively, allow peer review of same, is a serious defect in a particular
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1 procedure when seeking to substantiate prong one of Kelly. We are not focusing on generic topics when
2 dealing with TWGDAM and prong one. Rather, the Court must assess a particular procedure and its
3 compliance with TWGDAM. California courts seem to adopt this approach. In People v. Axell (1991)
4 235 Cal.App.3d 836, the court focused on the particular methodology of Cellmark, the laboratory which
5 performed the analysis but also used its own methods in the RFLP identification. Id at 853.⁴ Similarly,
6 in People v. Barney (1992) 8 Cal.App.4th 798, the First District reviewed essentially the same record
7 used in Axell regarding prong one. It found that Cellmark and the FBI, the labs involved in the
8 consolidated appeal, used validated procedures---Cellmark because its data had been turned over to the
9 defense in the Barney appeal, and the FBI because their protocols had been extensively peer reviewed
10 in scientific journals and the court took judicial notice of this fact. People v. Barney, supra., at 812.
11 Finally, in Venegas, the trial court relied on the precedent of Axell and Barney for the acceptance of FBI
12 methodology as to prong one, a position supported by the Supreme Court. Venegas, supra., at 77-78.
13 In sum, the three lead cases on RFLP-DNA have each analyzed prong one from the perspective of the
14 particular methodology used by the particular laboratory..

15 Focus on the particular methodology used by the lab finds support in several other cases.
16 In United States v. Shea, 957 F.Supp. 331(D.N.H. 1997), the trial court found the process of gel
17 electrophoresis using a particular kit which was the subject of peer review validation satisfied the
18 validation requirement. Id at 339. In United States v. Lowe, 954 F.Supp. 401 (D. Mass.1996), the trial
19 court pointed out that RFLP methodology in the particular case had used the chemiluminescence process
20 as opposed to autoradiography which had been approved by prior decisions. This new process needed
21 to be validated. Id. at 410. Furthermore, the case also dealt with D1S80/PCR which the Lowe court
22 found to be satisfied by peer review. Id. at 418. In United States v. Gaines, 979 F.Supp. 1429 (S.D.Fla.

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24 ⁴ In Axell, Cellmark did make available its developmental data at the request of defense, and also
25 presented the same data at scientific conferences for peer scrutiny. This permitted defense expert scrutiny
26 of Cellmark operations. People v. Axell, supra., at 856. See also State v. Schwartz (Minn. 1989) 447
27 N.W.2d 422.

1 1997) the court found the particular process for identification of DIS80 had been extensively tested and
2 determined reliable by validation studies of the laboratory and the government. Also, the process was
3 found valid and reliable in peer review. Id. at 1440.⁵

4 Having determined the import of scientific validation in the determination of prong one,
5 the next course for this Court is to apply this element to the cases at bar. As to STR identification, which
6 is one of the two procedures examined in this record, the prosecution has argued the STR identification
7 is accepted among the scientific community. What they also need to establish is the ABD Green One Kit,
8 developed by Perkin-Elmer, implementing the identification procedure in the ABD Genetic Analyzer 310
9 capillary electrophoresis instrument, also developed by Perkin-Elmer, is scientifically validated. This is
10 because the cases cited above, and others reviewed by the Court, mandate that attention must be placed
11 on the methodology used in the particular case and not STRs generally.

12 In this regard, it is clear the San Francisco Crime Lab (hereinafter SFCL), with regards
13 to STR identification, engages in a process known as capillary electrophoresis to identify STR loci. The
14 Court found no reported case which approves this procedure. Electrophoresis generally, and gel
15 electrophoresis specifically, have been discussed in the cases and found to comply with general scientific
16 community standards. However, this appears to not be the particular process used by SFCL. See
17 Defense Exhibit UUUUUU. While it may be correct the prosecution's primary focus as to prong one
18 was the acceptance of STRs generally among the scientific community, (Reporter Transcript pp114-153,
19 hereinafter, RT) a review of the relevant cases cited above as well as documents such as UUUUUU
20 indicate that developmental validation is both necessary and process specific. A full review of the record
21 will support the fact the prosecution was on notice that validation was always in issue with regards to
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23 ⁵ While each of these cases are federal and involve a Daubert analysis, they are significant to this
24 Court for several reasons. First, they reflect that even under the more liberal standard, validation is
25 essential, and that this must apply to the particular procedure. Also, the cases reflect the assessment of
26 trial courts after listening to substantial evidence on the point. Finally, the particular opinions contain the
27 discussion rarely permitted in the several appellate cases reviewed by the Court.

1 the Green One Kit. The Court advised the government that Dr. Holt could not rely on developmental
2 validation reports and studies conducted at Perkin-Elmer by Holt and her co-workers because of the
3 failure to provide discovery to the defense. RT 150.⁶ Also, the Court allowed the defense discovery to
4 determine the nature of the peer review conduct by the California Department of Justice regarding the
5 Green One Kit, referred to in Peoples 80. This was the only validation study submitted by Dr. Holt of
6 Green One in evidence. Indeed, the prosecutions exhibits submitted at the end of the case limit validation
7 of the Green One Kit to that particular exhibit. The other instances of validation apply to kits produced
8 by other manufacturers. These other kits have been submitted to appropriate peer review. In summary,
9 the issue of developmental validation (validation under TWGDAM 4.1) was noticed to the prosecution
10 as early as Day 3 of our three month hearing. The key instance of peer review of Green One was the
11 Department of Justice study which was contested by the defense in their case-in-chief. The study was
12 the basis of rebuttal presented by the prosecution. The lack of validation has been a key thrust of the
13 defense in its brief.

14 With Dr. Holt not able to provide the necessary validation of Green One under TWGDAM
15 section 4.1, the prosecution turned to Peoples 80.⁷ However, that exhibit, and the test it purports to
16 represent, in hindsight, is not helpful to the government. First of all, the Director of the California DOJ
17 Laboratory, Lance Gima, stated that DOJ did not conduct developmental validation studies of Green
18 One. What they did was perform internal validation studies consistent with TWGDAM 4.5. Also, Gima
19 did not have DOJ studies peer reviewed. Defense Exhibit KKKKKKK. This affidavit, submitted under
20 penalty of perjury, by Lance Gima, was substantiated by rebuttal witness, Dr. John Tonkyn. Tonkyn is
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22 ⁶ While sustaining the proprietary information claim of Perkin-Elmer in this regard, the Court was
23 not determining the prosecution could refrain from validating Green One as used by SFCL according to
24 section 4.1 of TWGDAM.

25 ⁷ Even Dr. Holt conceded that particular kits, before being admissible forensically, need to be
26 validated. RT 96. Of course, when we talk about validation, we necessarily mean the degree required
27 by TWGDAM—published or peer reviewed validation.

1 significant because he is the lead author of the abstract which is Peoples 80. However, Dr. Tonkyn
2 acknowledged that Green One studies referred to in exhibit 80 were only internal validation studies. They
3 were not developmental. Furthermore, Dr. Tonkyn acknowledged the studies were not done on a
4 capillary electrophoresis platform using the 310 Genetic Analyzer, but on the gel-based 377 DNA
5 Sequencer. RT 5340-5341; 5421-5424; 5432; 5453. Tonkyn related several problems with the process,
6 all of which suggest what DOJ conducted was nothing like the end result of a developmental validation
7 of Green One Kit. See generally, RT vol. 38-39, testimony of Dr. Tonkyn. Finally, Dr. Tonkyn never
8 viewed the DOJ study, exhibit 80, as developmental validation for the Green One Kit. Indeed, he
9 acknowledged the only developmental validation study of Green One he is aware of is Perkin Elmer's
10 Manual for the Green One Kit. RT 5477.

11 The sum of this record is the government has not provided the Court with enough to
12 conclude that STRs identified by using Green One with ABD Genetic Analyzer 310 satisfies TWGDAM
13 requirements pertaining to developmental validation. There was no discovery of developmental
14 validation conducted by Perkin-Elmer. The exhibits referenced by the prosecution in its post hearing brief
15 deal with peer review of other methods involving STR identification. As to CODIS, the databank
16 identification system, the fact that Green One is used by some agencies does not mean that Green One
17 is forensically satisfactory. As was pointed out during argument, there are numerous scientific
18 procedures used for various governmental and commercial endeavors, such as the polygraph, which fulfill
19 important purposes. Yet, these procedures have not been accepted in court because, as Daubert and
20 Kelly suggest, forensic "truth" is different from laboratory validity or employment utility.

21 Unlike the matter of STRs and the scientific community, the acceptance of D1S80 within
22 the scientific community appears satisfied. The peer review regarding D1S80 identification has been
23 detailed by the prosecution to the satisfaction of the Court in the documents submitted. At SFCL, the
24 particular kit used in D1S80 analysis is the AmpliFLP D1S80 PCR Amplification Kit. Exhibit 41 of the
25 prosecution contains a validation study that appeared in the Journal of Forensic Sciences in May 1995.
26 It was validated when used consistent with TWGDAM guidelines. The study concluded: "The results
27 clearly demonstrate that even compromised DNA samples can produce accurate and reliable typing
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1 results using this D1S80 system." Exhibit 41 at 433. Several other validation studies are submitted by
2 the people for D1S80 generally and they seem consistent with the particular kit used by SFCL.

3 On the other hand, the defense attacks D1S80 based on particular reads in published
4 reports and the 1996 and 1998 studies by Spanish researchers. Exhibit TT and Exhibit 83. However,
5 Exhibit 83 includes a letter from the researchers indicating their lab continues to use D1S80 for forensic
6 purposes and that the problem experienced in Exhibit 83 can be monitored. The fact the same researchers
7 found continued evidence of microbial DNA which mimicked human DNA does not cause this Court to
8 exclude such evidence, especially when the problem can be controlled by certain measures in the
9 particular laboratory. Any forensic witness subpoenaed by the prosecution would be expected to
10 consider and deal with this observation by the Madrid group.

11 It is also true that, while no California appellate decision exists regarding D1S80, several
12 other courts have approved the D1S80 locus in forensic identification. States which follow the Frye
13 standard that have done so include Watts v. State, ___ Miss. ___ (1-28-99, 1999 WL 33867); Smith v.
14 State, (1998) 702 N.E.2d 668 (Indiana Supreme Court); Brodine v. State, 936 P.2d 545 (Alaska Court
15 of Appeal 1997); Redding v. State, 219 Ga.App.182, 464 S.E.2d 824 (1995); Commonwealth v. Francis,
16 436 Pa.Super.456, 648 A.2d 49 (1994). Courts which follow the federal standard that have approved
17 D1S80 include Commonwealth v. Sok, 425 Mass.787, 683 N.E.2d 671 (1997); United States v. Gaines,
18 979 F.Supp.1429 (S.D.Fla.1997); and United States v. Lowe, 954 F.Supp.401 (D. Mass.1996).

19 Having determined the scientific community issue regarding prong one as to STRs and
20 D1S80, the next step is to determine whether the product rule applies to the loci which are accepted
21 forensically. In Venegas, the Supreme Court acknowledged the role of the NRC reports in the
22 development of this issue. The decision quotes substantially from the two reports and considers the 1992
23 Report as a reflection of the scientific community at the time of the actual trial. At that time, the NRC
24 Report adopted a modified ceiling approach. Barney mandated the same for California courts. People
25 v. Barney, supra., 8 Cal.App.4th at 821-822. Since Barney, for purposes of Kelly, the NRC has issued
26 a new report, called NRC-2 for shorthand purposes. Venegas affirms the significance of the reports by
27 the National Research Council in this area. People v. Venegas, supra., 18 Cal.4th at 89. To this Court,
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1 it seems consistent with Venegas and the importance of NRC-2 in this area of forensic evidence to
2 strongly consider the current position of that study regarding statistic evidence in DNA trials.

3 The NRC-2 Report adopts, essentially, the product rule. Recommendation 4.1 states:

4 In general, the calculation of a profile frequency should be
5 made with the product rule. If the race of the person who left the
6 evidence-sample DNA is known, the database for the person's race
7 should be used; if the race is not known, calculations for all racial
8 groups to which possible suspects belong should be made. For systems
9 such as VNTRs, in which a heterozygous locus can be mistaken for a
10 homozygous one, if an upper bound on the genotypic frequency at an
11 apparently homozygous locus (single band) is desired, then twice the
12 allele (bin) frequency, $2p$, should be used instead of p^2 . For systems
13 in which exact genotypes can be determined, $p^2 + p(1-p)\theta$ should be
14 used for the frequency at such a locus instead of p^2 . A conservative
15 value of θ for the U.S. population is 0.01; for some small, isolated
16 populations, a value of 0.03 may be more appropriate. For both kinds
17 of systems, $2p;p$ should be used for heterozygotes.

18 This is not an unrestricted embrace of the product rule. Because of concerns for technician mistakes or
19 misreads, or because of subcategories that exist among ethnic groups and the effect of intermarriage, the
20 NRC made the above qualifications of the product rule. A somewhat conservative approach to the large
21 ratios developed by particular laboratories using the product rule seems indicated at least in California
22 today when one reviews the language of Venegas. The opinion acknowledges the criticism of NRC-1
23 and the modified ceiling rule when it refers to such geneticists as Weir, Morton, and Chakraborty. Yet,
24 the opinion comes down with a reaffirmance of the 1992 NRC position. "We agree with the Court of
25 Appeal's further conclusion that 'the evidence [is] also clear that the scientific community regards the
26 NRC statistical methodology as *forensically* reliable'—i.e., as selecting figures that most favor the
27 accused from the scientifically based range of probabilities." *Id.* at 87. Baxter goes on to indicate this
28 position was the one reached by the appellate court in Barney when that case was decided; that it was
also the conclusion of the 1995 appellate decision of People v. Taylor (1995) 33 Cal.App.4th 262, 267;
that the modified ceiling approach "has" gained acceptance in several state decisions cited; and that
determinations made under "that methodology" are admissible under Kelly. This survey by the
unanimous court does not seem to focus on a situation that was, but rather, continues to be in place.
"The overwhelming view is that while the interim [modified] ceiling principle is artificially conservative,

1 it has been accepted for what it is, i.e., a method for calculating probabilities which was biased in favor
2 of defendants in order to compensate for any possible effect due to substructuring in human populations.
3 [Citation].”(emphasis added) People v. Venegas, *supra.*, at 89.

4 To this Court, the state of research among population geneticists and statisticians is such
5 that forensic application of the product rule as modified by NRC-2 is now the view of the general
6 scientific community.⁸ This does not mean the defense cannot introduce evidence to show the faults of
7 the data base used by the prosecution or the importance of laboratory error in the calculations made by
8 the government.⁹ However, the position documented by the latest NRC report, as well as the peer review
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10 ⁸ As the Court noted during the oral argument our Supreme Court has pending several cases
11 which specifically deal with the use of the product rule in DNA evidence. The first case, which has been
12 before Supreme Court for several years is People v. Soto. Perhaps this issue will soon be resolved.
13 Without the discussed language in Venegas this Court might conclude that an unmodified product rule
14 is accepted by the scientific community. There is most persuasive authority in several jurisdictions that
15 reach this conclusion. Commonwealth v. Blasioli, 713 A.2d 1117 (Pa.S.Ct. 1998); State v. Harvey, 151
16 N.J. 117, 196, 699 A.2d 596, 634 (N.J.S.Ct.1997); Commonwealth v. Rosier, ___ Mass. ___, 685 N.E.2d
17 739, 745(Mass.S.Ct. 1997), and numerous other high courts of the nation often cited in these opinions

18 ⁹ This Court will not adopt the well-documented position of Professor Koehler in this regard.
19 There is no need to calculate the lab error rate along with the likelihood ratio from DNA analysis. Our
20 system does not calculate lab error rates in any other forensic evidence effort. To include the two
21 together disregards the empirical nature of scientific evidence. Also, the lab error rate covers a variety
22 of errors subgrouped into interpretive mistakes and, alternatively, flaws in lab performance. Performance
23 errors take place not just in the lab, they also take place in the gathering of evidence. Interpretive
24 mistakes have never been the basis for court intervention in other forms of forensic analysis. Use of
25 defense experts, discovery, and full cross-examination can address this form of error. Berger,
26 “Laboratory Error Seen Through the Lens of Science and Policy,” 30 U.C.Davis L.Rev. 1081 (1997).
27 Professor Berger was the lone legal scholar who authored in the NRC-2 Report.

1 materials introduced by the prosecution convince this Court that the product rule, as modified, is the
2 appropriate standard.¹⁰

3 This Court finds little that needs to be said regarding prong two. Each witness who
4 testified at the Kelly hearing would have no problem appearing as experts under Evidence Code section
5 801 at a trial in these matters. The Court does note that Dr. Holt was a very credible witness, but that
6 her ties with Perkin-Elmer do present some concerns. This is especially significant since she was the only
7 witness called by the prosecution on the issue of molecular biology and DNA, a prong one issue. A
8 review of the other published cases on this subject demonstrate that it is often the case that the opposing
9 sides use experts who have no substantial tie with a particular manufacturer. This is especially so today
10 when several laboratories have become involved in forensic work with DNA.

11 The final prong facing this Court causes focus on the operation of SFCL and Alan Keel.
12 Under prong three, the Court needs to evaluate whether the SFCL has utilized procedures in the
13 particular case that comply with prong one requirements. People v. Venegas, supra., at 81. The moving
14 party must demonstrate the testifying expert "understand[s] the technique and its underlying theory, and
15 [is] thoroughly familiar with the procedures that were in fact used in the case at bar to implement the
16 technique." Id. In a prong three analysis, a court does not focus on all derelictions in following the
17 prescribed scientific procedures. Errors such as mislabeling, mixing the wrong ingredients, or failing to
18 adhere to normal precautions against contamination are not typically within this analysis. Venegas
19 reasons that these are features that deal with the weight of the evidence and not admissibility, and a jury
20 can assess such factors when it considers the degree of professionalism evidenced by the lab technician.

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22 ¹⁰ The prosecution contends this will result in an under reporting of the scientific evidence. First
23 of all, the NRC-2 concluded 4.1 is a proper method to deal with certain issues relating to DNA statistics.
24 Secondly, the issue is not one of presenting a statistical overview to a group of population geneticists on
25 a topic of academia. It is the introduction of forensic evidence to a lay juror which must decide guilt in
26 a "forensically reliable" manner. Again, we realize the distinction between laboratory truth and forensic
27 truth.

1 Id. However, the fine line between readily apparent “missteps involving ‘the degree of professionalism’”
2 and regular disregard of fundamental protocols dealing with the process itself can cause a trial court to
3 determine the technician has an incorrect view of the technique and its underlying theory. Id. In the end,
4 after consideration of all evidence regarding Alan Keel and the SFCL, this Court concludes that the
5 government has satisfied its burden under Kelly by a bare preponderance of the evidence. This
6 conclusion is reached because Keel has demonstrated he is familiar with the nature of DNA forensic
7 analysis. He has essentially set-up forensic labs in Oakland and San Francisco in DNA. He is certified
8 by the American Board of Criminalistics in General Forensics and Molecular Biology. He has
9 implemented several manuals to deal with quality assurance and quality control. Finally, to a considerable
10 degree, Keel has made effort to comply with TWGDAM. Also, his conclusions have been subject to peer
11 review by Dr. Ed Blake, a recognized expert in this field, and determined to be correct.

12 However, there are issues that must be addressed with this witness in the very near future.
13 At the outset, Alan Keel’s credentials are not in compliance with DAB guidelines. He lacks the
14 appropriate academic background mandated by DAB 5.2.1 in that he has no Masters degree in the
15 particular sciences identified in the guideline, nor the semester hours in particular courses listed. More
16 importantly, he has not complied with the waiver option pursuant to 5.2.1.1. Familiarity with the record
17 involving past efforts at proficiency testing by Keel suggests lapses in meeting deadlines. On the record
18 before the Court, Keel would not satisfy DAB requirements for any contemporary analyses.¹¹ This Court
19 cannot be more critical of this particular circumstance.

20 Another issue of concern is the degree of bias Keel manifests in this area. Early in the
21

22 ¹¹ It is important to understand the DAB guidelines have been in effect since October 1, 1998.
23 The defense has argued particular case law obligates this Court to apply DAB guidelines may carry over
24 to the matters pertaining to this opinion. For now, since the issue was not fully litigated at the Kelly
25 hearing, this Court defers to the trial court this issue. It will certainly arise when the prosecution seeks
26 to qualify Keel as a witness under Section 720 of the Evidence Code. A trial court may share the defense
27 position. Naturally, compliance with 5.2.1.1 might nullify this contention.

1 discovery process, Keel submitted a lengthy declaration challenging the defense motion. See Defense Tab
2 37. It was beyond advocacy—it indicated a critical attitude toward the defense function in a criminal
3 case. While on the stand, Keel regularly indicated he chose to disregard particular protocols suggested
4 in the literature, including that of Perkin-Elmer and peer reviewed journals. Any relevant documentation
5 on this topic and certainly the case law which controls the admissibility of Keel's work product mandates
6 that DNA analysis is technical and rigorous analysis. It is not something to be rushed because the
7 technician has a hefty case load.¹² It certainly should not be something so basal that it can be performed
8 in a barn.¹³

9 The Court's concern over bias is rooted in the notion that a government criminalist is part
10 of the prosecution team. As Justice Sutherland suggested years ago, in commenting on the prosecutor,

11 [He] is the representative not of an ordinary party to
12 a controversy, but of a sovereignty whose obligation to govern
13 impartially is as compelling as its obligation to govern at all; and
14 whose interest, therefore, in a criminal prosecution is not that it
15 shall win a case, but that justice shall be done. . . [W]hile he may
16 strike hard blows, he is not at liberty to strike foul ones. It is as
17 much his duty to refrain from improper methods calculated to
18 produce a wrongful conviction as it is to use every legitimate
19 means to bring about a just one. Berger v. United States, 295 U.S. 78, 88(1935)

20 Alan Keel, because of his own decision, has opted to adhere to the same credo. Engaging in shortcuts
21 or performing "missteps" (failing to follow manufacturer protocols) too often could support the
22 observation that the Berger directive is not a feature of the job description—let this opinion serve as a

23 ¹² In Exhibit LLLLLLLL, the California State Auditor Working Papers, a survey of the SFCL
24 indicates the DA's office has a backlog of 100 requests and 40 cases in progress. Also, while the number
25 of uniformed police have increased by 25%, the SFCL has not had a staff increase since 1979.

26 ¹³ This utterance by Keel was perhaps the most memorable yet disturbing declaration in the entire
27 record.

1 forewarning.¹⁴

2 Finally, after this hearing and the issues raised, it is clear the SFCL is in need of some
3 direction from the prosecution. Documents presented in this case suggest things are in disarray,
4 especially at the administrative level. Audit reports that are part of this record should be reviewed by the
5 Office of the Chief as well as the District Attorney. Little improvement has been manifested since the
6 Civil Grand Jury authored its critical report several years ago. While it has been represented the Crime
7 Lab will be moving its location to a "bigger and better" facility "soon," without changes suggested in the
8 various reviews on record in the case, a new physical plant alone will not suffice. Granted, it is not the
9 duty of the Superior Court to dictate policy of the executive. However, it is the obligation of the courts
10 to prevent the introduction of evidence which is developed in an inappropriate fashion. As indicated
11 earlier in this decision, the prosecution only barely satisfied prong three. The prosecution should see that
12 problems identified in Tab 32, as well as the Audit Reports and Grand Jury study are finally resolved.
13 Finally, the Crime Lab should proceed without delay towards proper certification by the American
14 Society of Crime Laboratories Directors.

15 In summary, for the reasons stated above, the Court makes the following determination:

16 1. The prosecution has not established that STRs as identified with the Green One Kit are
17 admissible under prong one of the Kelly test.

18 2. The prosecution has established that D1S80 loci are admissible in these cases because
19 of compliance with prong one.

20 3. The Court adopts the product rule as it was approved with appropriate modifications
21 in the Second NRC Report, Recommendation 4.1.

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26 _____
27 ¹⁴ Practically speaking, any witness should anticipate future proceedings will involve research in
28 and reference to, the sworn testimony of that witness in prior proceedings.

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4. The Court finds by a preponderance the San Francisco Crime Lab complied with prong three in these cases.

Date May 5, 1999

Robert L. Anderson
Superior Court Judge