

TrueAllele® Validation Reports and Papers

No.	File (pdf)	Title	Author	Organization	Date	Type	Pages	Topic	ncon
1	NYSJFS2004	Validation study of the TrueAllele® automated data review system	Kadash, Kozlowski, Biega, Duceman	NYSP	July 2004	Article	8	Analyze testing, allele call comparison and concordance, batch processing	1
2	ISHI2006	Scientific Validation of Mixture Interpretation Methods	Perlin	Cybergenetics	December 2006	Report	34	validation approach, admissibility, validation comparison	2
3	FSS2007	TrueAllele® System 2 and Genotyper/Genescan Peak Heights and Orchid UK Data	Cybergenetics	Cybergenetics	May 2007	Report	2	Analyze and Genescan sizing comparison	
4	PLoSONE2009	An information gap in DNA evidence interpretation	Perlin, Sinelnikov	Cybergenetics	December 2009	Article	16	method comparison, TrueAllele methods	2
5	DNAsub2010	New York State TrueAllele® Casework Developmental Validation	Duceman, Perlin, Belrose	Cybergenetics; NYSP; NRFI	February 2010	Report	64	casework samples, preserve information, method comparison	2-3
6	Cellmark2010	TrueAllele® Volume Crime Validation Study	Cybergenetics, Orchid Cellmark	Cybergenetics; Orchid Cellmark	February 2010	Report	1	timings, human and computer comparison	1-2
7	DNAsub2011	NYSP TrueAllele® Validation	Cybergenetics	Cybergenetics	May 2011	Report	21	property crime, efficacy, reproducibility	2-3
8	Suffolk2011	Suffolk County TrueAllele® Validation	Perlin, Legler, Galdi	Cybergenetics; Suffolk County CL	May 2011	Report	8	thresholds lose information, "inconclusive"	2-4
9	NSW2011	Phase 1 Evaluation Report of Cybergenetics TrueAllele® Expert System	NSW Review Team	NSW Police; NSW Health	July 2011	Report	103	timings, validation, limitations	1-3
10	Massachusetts2011	Phase I: Internal Validation of TrueAllele Genetic Calculator as an Expert Assistant for Reads and Review of Data from Reported Sexual Assault Evidence	Sgueglia, Harrington	Massachusetts State Police Crime Laboratory	August 2011	Report	89	sensitivity, method optimization, internal validation	1-4

11	NIST2011	Exploring the Capabilities of Mixture Interpretation Using True Allele Software	Coble, Butler	NIST	September 2011	Slides	40	Mixture interpretation using TrueAllele	2-3
12	Australia2011	Australia TrueAllele® Validation Report	Cybergenetics	Cybergenetics	September 2011	Report	24	efficacy, known references, joint amplification, relatives	2-3
13	JFS2011	Validating TrueAllele® DNA mixture interpretation	Perlin, Legler, Spencer, Smith, Allan, Belrose, Duceman	Cybergenetics; NRFI; NYSP	November 2011	Article	18	TrueAllele methods, case example, method comparison	2
14	SciJust2013	DNA mixture genotyping by probabilistic computer interpretation of binomially-sampled laser captured cell populations: Combining quantitative data for greater identification information	Ballantyne, Hanson, Perlin	Cybergenetics; Nat. Center for Forensic Sci.	June 2013	Article	12	LCN, mixture weights, joint TrueAllele interpretation	2
15	NYSlab2013a	New York State Police Crime Laboratory System TrueAllele® Casework Validation Addendum	Caponera	NYSP	June 2013	Report	62	Identifiler Plus data, 2 and 3 contributors, MCMC study	2-3
16	NYS2013	New York State TrueAllele® Validation on DNA Mixtures of Known Composition	Perlin, Hornyak, Caponera, Duceman	Cybergenetics; NYSP	October 2013	Report	22	3500xl and 3130xl sequencers, short and long injection times	2-3
17	JFS2013	New York State TrueAllele® Casework validation study	Perlin, Belrose, Duceman	Cybergenetics; NRFI; NYSP	November 2013	Article	9	casework samples, preserve information, method comparison	2-3
18	NYSlab2013b	New York State Police Crime Laboratory System TrueAllele® Casework Validation Addendum	Caponera	NYSP	December 2013	Report	81	family mixtures, 4 contributors	2 & 4
19	PLoS ONE2014	TrueAllele® Casework on Virginia DNA mixture evidence: computer and manual interpretation in 72 reported criminal cases	Perlin, Dormer, Hornyak, Schiermeier-Wood, Greenspoon	Cybergenetics; VDFS	March 2014	Article	15	casework samples, accuracy, method comparison	2-4

20	AlleleShare2014	TrueAllele® Casework Separates DNA Mixtures that Share Alleles	Clarke, Hornyak, Allan, Perlin	Cybergenetics	March 2014	Report	20	allele sharing, mixture weight, reproducibility, low template (100 pg)	2
21	PP21kit2014	TrueAllele® Casework Validation on PowerPlex® 21 Mixture Data	Hornyak, Allan, Perlin	Cybergenetics	March 2014	Report	23	PowerPlex 21 mixtures	2-4
22	Minifiler2014	TrueAllele® Validation on Minifiler™ Mixture Data	Hornyak, Allan, Perlin	Cybergenetics	July 2014	Report	10	Minifiler™ mixtures	2
23	PP16HS2014	TrueAllele® Validation on PowerPlex® 16 HS Mixture Data	Hornyak, Bowkley, Perlin	Cybergenetics	July 2014	Report	10	PowerPlex® 16 HS mixtures	2-3
24	IDPlus2014	TrueAllele® Validation on Identifiler® Plus Mixture Data	Hornyak, Allan, Perlin	Cybergenetics	August 2014	Report	19	Identifiler® Plus mixtures	2-3
25	RCSD2015	TrueAllele Validation	Amick	RCSD Dept. of Forensic Sci.	March 2015	Report	12	known samples, casework, mixtures, stochastic effects, contamination	1-2
26	Duquesne2015	Development of Kinship Mixtures and Subsequent Analysis Using TrueAllele® Casework	Guest, Ludvico, Ferrara, Perlin	Duquesne University; Cybergenetics	April 2015	Thesis	56	family mixtures, genotype separation, 2-5 contributors	2-5
27	JFS2015	TrueAllele® genotype identification on DNA mixtures containing up to five unknown contributors	Perlin, Hornyak, Sugimoto, Miller	Cybergenetics; KRCL	July 2015	Article	12	2-5 contributors, high/low template, Identifiler®	2-5
28	Baltimore2015	Baltimore Police Department TrueAllele® Validation	Hornyak, Hebert, Allan, Perlin	Cybergenetics; Baltimore PD CL	August 2015	Report	57	1-6 contributors, high/low template, PowerPlex® Fusion	1-6
29	JFS2015VA	Establishing the limits of TrueAllele® Casework: a validation study	Greenspoon, Schiermeier-Wood, Jenkins	VDFS	September 2015	Article	14	TrueAllele limits, relatives, mixture weights, 1-4 contributors	1-4
30	Promega2015VA	Further Exploration of TrueAllele® Casework	Greenspoon, Schiermeier-Wood, Jenkins	VDFS	October 2015	Poster	1	differential degradation, contributor assumptions, over-amplified DNA	2-4

31	SC2016	TrueAllele Casework Validation	Donahue	Beaufort County Sheriff's Office	January 2016	Report	21	sensitivity, specificity, reproducibility, mixture weight assessment, 1-5 contributors, casework, use of known contributors, comparison with manual review	2-5
32	GBI2016v1, GBI2016v2	Georgia Bureau of Investigation Forensic Biology Unit TrueAllele® Validation	Hornyak, Schmidt, Perlin	Cybergenetics; GBI Forensic Biology Unit	September 2016	Report	37, 40	sensitivity, specificity, reproducibility, 2-5 contributors, assumed knowns, contributor number assumption, inhibited DNA, MinElute samples, degraded DNA	2-5
33	Acadiana2016	Acadiana Criminalistics Laboratory TrueAllele® Casework Validation	Legler, Harris, Booker, Perlin	Cybergenetics; Acadiana Criminalistics Laboratory	October 2016	Report	29	sensitivity, specificity, reproducibility, casework samples, method comparison, Identifiler®, Identifiler® Plus	2-5
34	Cuyahoga2016	Cuyahoga County TrueAllele® Validation Study	Bauer, Butt, Perlin	Cybergenetics; Cuyahoga County Regional Forensic Science Laboratory	September 2016	Report	31	sensitivity, specificity, reproducibility, variable sampling time, contributor number assumption, known contributors, PowerPlex® Fusion, 3500 sequencer	2-10
35	Acadiana2017	Acadiana Criminalistics Laboratory TrueAllele® Casework Validation Using Investigator® 24plex Kits & 2017 Server Upgrade Performance Check	Harris	Acadiana Criminalistics Laboratory	May 2017	Report	23	sensitivity, specificity, reproducibility, 1-5 contributors, Investigator® 24plex, method comparison	1-5
36	GBI2017	TrueAllele® GlobalFiler Performance Check	Schmidt	GBI Forensic Biology Unit	August 2017	Report	16	sensitivity, specificity, reproducibility, 2-5 contributors, inhibited DNA, degraded DNA, GlobalFiler™	2-5

37	Fusion6C2018	TrueAllele® Casework Validation of the PowerPlex® Fusion 6C STR Kit	Hornyak, Brown, Perlin	Cybergenetics; Louisiana State Police Crime Laboratory	July 2018	Report	38	sensitivity, specificity, reproducibility, PowerPlex® Fusion 6C, degraded DNA, 1-5 contributors, sampling time, assumed knowns, kit comparison, casework samples	1-5
38	Kern2019	Validation of the TrueAllele® Casework VUler™ Kinship Application	Sugimoto	Kern Regional Crime Laboratory	August 2019	Report	26	sensitivity, specificity, accuracy, kinship inference, related individuals, casework example	1-5
39	JFS2020	Validating TrueAllele® interpretation of DNA mixtures containing up to ten unknown contributors	Bauer, Butt, Hornyak, Perlin	Cybergenetics; Cuyahoga County Regional Forensic Science Laboratory	March 2020	Article	27	sensitivity, specificity, reproducibility, variable sampling time, contributor number assumption, peeling, independence, linear relationship – quantity v match statistic, variable peak number, PowerPlex® Fusion, 3500 sequencer	1-10
40	Greenville2020	TrueAllele® Casework Validation on Greenville County DNA Lab GlobalFiler™ Data	Pujols, Browning, Bracamontes, Legler, Bauer, Perlin	Cybergenetics; Greenville County Department of Public Safety Forensic DNA Laboratory	March 2020	Report	52	sensitivity, specificity, reproducibility, 1-4 contributors, degraded DNA, familial mixtures, GlobalFiler™, CODIS, peeling, casework samples	1-4
41	Antillon2020	Deconvolution of DNA mixtures using replicate sampling and TrueAllele® mixture interpretation	Antillon	George Mason University	Fall 2020	Thesis	57	low-template DNA, mixture weights, single and joint TrueAllele interpretation, single vs joint interpretation comparison	2-5

42	Chaudhry2020	Peeling away uncertainty: A probabilistic approach to DNA mixture deconvolution	Chaudhry	George Mason University	Fall 2020	Thesis	71	peeling/conditioning on known contributor genotypes, order of conditioning genotypes, reducing uncertainty	2-5
43	MNPD2023	Metro Nashville Police Department Crime Laboratory TrueAllele® Casework Validation on PowerPlex® Fusion 6C data	Mole, Bracamontes, Fleming, Legler, Perlin	Cybergenetics; Metro Nashville Police Department Crime Laboratory	June 2023	Report	75	sensitivity, specificity, reproducibility, 1-4 contributor mixtures, casework mixtures, degraded DNA, inhibited DNA, PowerPlex® Fusion 6C, exact error rates	1-4

Key:

Type	Description
Article	Publication in peer-reviewed journal
Report	Internal write-up of a study
Slides	Presentation of a study
Thesis	Paper describing a personal research study
Poster	Poster presentation of a study

TrueAllele® Validation Papers and Reports Citations

1. Kadash K, Kozlowski BE, Biega LA, Duceman BW. Validation study of the TrueAllele® automated data review system. *J Forensic Sci.* 2004;49(4):1-8.
2. Perlin MW. Scientific validation of mixture interpretation methods. *Promega's Seventeenth International Symposium on Human Identification*, 2006 Oct 10-12; Nashville, TN.
3. Cybergenetics. "TrueAllele® System 2 and Genotyper/Genescan Peak Heights and Orchid UK Data." *Cybergenetics (Pittsburgh, PA)*, May 2007.
4. Perlin MW, Sinelnikov A. An information gap in DNA evidence interpretation. *PLoS ONE.* 2009;4(12):e8327.
5. B.W. Duceman, M.W. Perlin, and J.L. Belrose. "New York State TrueAllele® Casework Developmental Validation." *New York State Police Forensic Investigation Center (Albany, NY), Cybergenetics (Pittsburgh, PA), and Northeast Regional Forensic Institute (Albany, NY)*, February 2010.
6. Cybergenetics and Orchid Cellmark. "TrueAllele® Volume Crime Validation Study." *Cybergenetics (Pittsburgh, PA) and Orchid Cellmark (Abingdon, Oxfordshire, UK)*, February 2010.
7. Cybergenetics. "NYSP TrueAllele® Validation." *Cybergenetics (Pittsburgh, PA)*, May 2011.
8. M. Perlin, M. Legler, and J. Galdi. "Suffolk County TrueAllele® Validation." *Cybergenetics (Pittsburgh, PA) and Suffolk County Crime Laboratory (Hauppauge, NY)*, May 2011.
9. NSW Review Team. "Phase 1 Evaluation Report of Cybergenetics TrueAllele® Expert System." *NSW Police Force (Lidcombe, New South Wales, Australia)*, July 2011.
10. J. Sgueglia and K. Harrington. "Phase I: Internal Validation of TrueAllele Genetic Calculator as an Expert Assistant for Reads and Review of Data from Reported Sexual Assault Evidence." *Massachusetts State Police Forensic and Technology Center (Maynard, MA)*, August 2011.
11. M.D. Coble and J.M. Butler. "Exploring the Capabilities of Mixture Interpretation Using True Allele Software." *National Institute for Standards and Technology (Gaithersburg, MD)*, September 2011.

12. Cybergenetics. "Australia TrueAllele® Validation Report." *Cybergenetics (Pittsburgh, PA)*, September 2011.
13. Perlin MW, Legler MM, Spencer CE, Smith JL, Allan WP, Belrose JL, Duceman BW. Validating TrueAllele® DNA mixture interpretation. *J Forensic Sci.* 2011;56(6):1430-1447.
14. Ballantyne J, Hanson EK, Perlin MW. DNA mixture genotyping by probabilistic computer interpretation of binomially-sampled laser captured cell populations: Combining quantitative data for greater identification information. *Sci Justice.* 2013;53(2):103-114.
15. J. Caponera. "New York State Police Crime Laboratory System TrueAllele® Casework Validation Addendum." *New York State Police Forensic Investigation Center (Albany, NY)*, June 2013.
16. M.W. Perlin, J. Hornyak, J. Caponera, and B. Duceman. "New York State TrueAllele® Validation on DNA Mixtures of Known Composition." *Cybergenetics (Pittsburgh, PA) and New York State Police Forensic Investigation Center (Albany, NY)*, October 2013.
17. Perlin MW, Belrose JL, Duceman BW. New York State TrueAllele® Casework validation study. *J Forensic Sci.* 2013;58(6):1458-1466.
18. J. Caponera. "New York State Police Crime Laboratory System TrueAllele® Casework Validation Addendum." *New York State Police Forensic Investigation Center (Albany, NY)*, December 2013.
19. Perlin MW, Dormer K, Hornyak J, Schiermeier-Wood L, Greenspoon S. TrueAllele® Casework on Virginia DNA mixture evidence: computer and manual interpretation in 72 reported criminal cases. *PLOS ONE.* 2014;9(3):e92837.
20. M.A. Clarke, J. Hornyak, W.P. Allan, and M.W. Perlin. "TrueAllele® Casework Separates DNA Mixtures that Share Alleles." *Cybergenetics (Pittsburgh, PA)*, March 2014.
21. J. Hornyak, W.P. Allan, and M.W. Perlin. "TrueAllele® Casework Validation on PowerPlex® 21 Mixture Data." *Cybergenetics (Pittsburgh, PA)*, March 2014.
22. J. Hornyak, W.P. Allan, and M.W. Perlin. "TrueAllele® Validation on Minifiler™ Mixture Data." *Cybergenetics (Pittsburgh, PA)*, July 2014.
23. J. Hornyak, M. Bowkley, and M.W. Perlin. "TrueAllele® Validation on PowerPlex® 16 HS Mixture Data." *Cybergenetics (Pittsburgh, PA)*, July 2014.

24. J. Hornyak, W.P. Allan, and M.W. Perlin. "TrueAllele® Validation on Identifier® Plus Mixture Data." *Cybergenetics (Pittsburgh, PA)*, August 2014.
25. G. Amick. "TrueAllele Validation." *Richland County Sheriff's Department (Columbia, SC)*, March 2015.
26. K. Guest, L. Ludvico, L. Ferrara, and M. Perlin. "Development of Kinship Mixtures and Subsequent Analysis Using TrueAllele® Casework." *Master's Thesis, Duquesne University (Pittsburgh, PA)*, April 2015.
27. Perlin MW, Hornyak J, Sugimoto G, Miller K. TrueAllele® genotype identification on DNA mixtures containing up to five unknown contributors. *J Forensic Sci.* 2015; 60(4):857-868.
28. J.M. Hornyak, T. Hebert, W.P. Allan, and M.W. Perlin. "Baltimore Police Department TrueAllele® Validation." *Cybergenetics (Pittsburgh, PA) and Baltimore City Police Department Laboratory Section (Baltimore, MD)*, August 2015.
29. Greenspoon SA, Schiermeier-Wood L, Jenkins BA. Establishing the limits of TrueAllele® Casework: a validation study. *J Forensic Sci.* 2015;60(5):1263-1276.
30. S. Greenspoon, L. Schiermeier-Wood, and B. Jenkins. "Further Exploration of TrueAllele® Casework." *Promega's Twenty Sixth International Symposium on Human Identification, Grapevine, TX*, October 2015.
31. J. Donahue. "TrueAllele Casework Validation." *Beaufort County Sheriff's Office (Beaufort, SC)*, January 2016.
32. J.M. Hornyak, E.M. Schmidt, and M.W. Perlin. "Georgia Bureau of Investigation Forensic Biology Unit TrueAllele® Validation." *Cybergenetics (Pittsburgh, PA) and Georgia Bureau of Investigation Forensic Biology Unit (Decatur, GA)*, September 2016.
33. M.M. Legler, B.L. Harris, C.L. Booker, and M.W. Perlin. "Acadiana Criminalistics Laboratory TrueAllele® Casework Validation." *Cybergenetics (Pittsburgh, PA) and Acadiana Criminalistics Laboratory (New Iberia, LA)*, October 2016.
34. D.W. Bauer, N. Butt, and M.W. Perlin. "Cuyahoga County TrueAllele® Validation Study." *Cybergenetics (Pittsburgh, PA) and Cuyahoga County Regional Forensic Science Laboratory (Cleveland, OH)*, September 2016.
35. B.L Harris. "Acadiana Criminalistics Laboratory TrueAllele® Casework Validation Using Investigator® 24plex Kits & 2017 Server Upgrade Performance Check." *Acadiana Criminalistics Laboratory (New Iberia, LA)*, May 2017.

36. E.M. Schmidt. "TrueAllele® GlobalFiler Performance Check." *Georgia Bureau of Investigation Forensic Biology Unit (Decatur, GA)*, August 2017.
37. J.M. Hornyak, C.L. Brown, and M.W. Perlin. "TrueAllele® Casework Validation of the PowerPlex® Fusion 6C STR Kit." Cybergenetics (Pittsburgh, PA) and Louisiana State Police Crime Laboratory (Baton Rouge, LA), July 2018.
38. G. Sugimoto. "Validation of the TrueAllele® Casework VUler™ Kinship Application." Kern Regional Crime Laboratory (Bakersfield, CA), August 2019.
39. Bauer DW, Butt N, Hornyak JM, Perlin MW. Validating TrueAllele® interpretation of DNA mixtures containing up to ten unknown contributors. *J Forensic Sci*, 2020; 65(2):380-398.
40. B.A. Pujols, B.M. Browning, J.M. Bracamontes, M.M. Legler, D.W. Bauer, and M.W. Perlin. "TrueAllele® Casework Validation on Greenville County DNA Lab GlobalFiler™ Data." Cybergenetics (Pittsburgh, PA) and Greenville County Department of Public Safety Forensic DNA Laboratory (Greenville, SC), March 2020.
41. S. Antillon. "Deconvolution of DNA mixtures using replicate sampling and TrueAllele® mixture interpretation [master's thesis]." George Mason University (Fairfax, VA), 2020.
42. H.S. Chaudhry. "Peeling away uncertainty: A probabilistic approach to DNA mixture deconvolution [master's thesis]." George Mason University (Fairfax, VA), 2020.
43. E.E. Mole, J.M. Bracamontes, I. Fleming, M.M. Legler, and M.W. Perlin. "Metro Nashville Police Department Crime Laboratory TrueAllele® Casework Validation on PowerPlex® Fusion 6C data." Cybergenetics (Pittsburgh, PA) and Metro Nashville Police Department Crime Laboratory (Nashville, TN), June 2023.