

SCIENTIFIC STUDIES OF (and about) BIOMATRICA'S TECHNOLOGY

DNASTABLE® AND DNA STABILITY

Articles & Posters

- Lee, S.B., Clabaugh, K.C., Silva, B., Odigie, K.O., Fourney, R.M., Stevens, J., Carmody, G.R., Coble, M.D., Loreille, O., Scheible, M., Parsons, T.J., Pozder, A., Eisenberg, A.J., Budowle, B., Taha A., Miller, R.W. McGuckian, A.B., Conover-Sikorsky, J., Crouse, C.A. *Assessing a novel room temperature DNA storage medium for forensic biological samples*. **2011**. Forensic Science International – Genetics, *in press*.
- Kramer, K. J., Myers, B. H., Harrah-Lea, H., Stanton, P. *Comparison of room temperature forensic DNA extracts sample preservation methods*, **2011**. 63rd AAFS Meeting, Chicago, IL.
- Lee, S.B., Crouse, C.A., Kline, M.C. *Optimizing storage and handling of DNA extracts*. Forensic Sci Rev. 22(2): pp131-144, 2010
- DiNaro, E., Trogon, C., Lee, S.B. *Optimizing DNA Storage at Room Temperature: Teflon® vs. Polypropylene Tubes With and Without Polymers*. Poster presentation at the 63rd AAFS Meeting, Chicago, IL, Feb 2011.
- Fripiat, C., Zorbo, S., Leonard, D., Marcotte, A., Chaput, M., Aelbrecht, A., Noel, F. *Evaluation of novel forensic DNA storage methodologies*, **2010**. Forensic Science International – Genetics.
- Hadinoto, G. M. Los Angeles County Sheriff's Department Scientific Services Bureau, Los Angeles, CA. *Evaluation of the Biomatrix® Room Temperature DNA Storage System: 12-month and 45-month Data*, **2010**. Poster #60, 21st International Symposium on Human Identification, San Antonio, TX.
- Wan, E., Akana, M., Pons, J., Chen, J., Musone, S., Kwok, P.-Y., Liao, W. *Green Technologies for Room Temperature Nucleic Acid Storage*. Curr. Issues Mol. Biol. (**2010**) 12: 135-142.
- Cecelia A. Crouse, Ph. D., *"Novel Methods for DNA Storage/Preservation"*, Workshop #9 – Advances in Forensic DNA Analysis, 62nd AAFS Annual Scientific Meeting, Seattle, WA, Feb 22, **2010**.
- Bonnet, J., Colotte, M., Coudy, D., Couallier, V., Portier, J., Morin, B., Tuffet, S. *Chain and conformation stability of solid state DNA: implications for room temperature storage*. Nucleic Acids Res. p1-16, Nov **2009**.
- Thomas Doedt, QIASafe™ DNA - *An innovative Anhydrobiosis-based technology for long-term storage of DNA*. Proceedings of the workshop on Long-term storage of DNA Material, August **2009**.

- Budowle, B., van Daal, A. ***Extracting evidence from forensic DNA analyses - Future molecular biology directions***. BioTechniques Special Issue, Vol. 46, No. 5, April 2009, 339–350
<http://www.biotechniques.com/BiotechniquesJournal/specialissues/2009/April/Extracting-evidence-from-forensic-DNA-analyses-future-molecular-biology-directions/biotechniques-140701.html?autnID=187795>
- Peggy Ho Faix and Althea Lee, ***How to improve recovery of DNA profiles***, Evidence Technology Magazine, Vol 7 (#2), March-April 2009, pp. 28-31.
- Ahmad, T., Miller, R.W., McGuckian, A.B., Conover-Sikorsky, J., Crouse, C.A. ***Biomatrix DNA SampleMatrix®: A New Prospect for Forensic DNA Sample Storage***. Poster Presentation at the American Academy of Forensic Science Meeting, Denver, CO. February 2009.
- Lee, S.B. and Roberts, K. ***Saving your samples: Room temperature stabilization of DNA and RNA***, Emerging technologies in Forensic Science, 2008, 1: 8-10.
- Clabaugh, K., Silva, S., Odigie, K., Fournery, R., Stevens, J., Carmody, G., Coble, M., Loreille, O., Scheible, M., Kline, M., Parsons, T., Pozder, A., Eisenberg, A., Budowle, B., Lee, S.B. ***Storage of DNA samples at ambient temperature using DNA-SampleMatrix***, Poster presented at the 18th Annual International Symposium on Human Identification meeting, Hollywood, CA. October, 2007.
- Sigurdson, A.J., Ha, M., Cosentino, M., Franklin, T., Haque, K.A., Qi, Y., Glaser, C., Reid, Y., Vaught, J.B., Bergen, A.W. ***Long-term storage and recovery of buccal cell DNA from treated cards***. Cancer Epidemiol Biomarkers Prev.15: p385, 2006.
- Dutton, G. ***Thinking outside the icebox of DNA***, The Scientist 19(14):p28, 2005.
- Fowler, J.C.S., Harding, H.W.J., Burgoyne, L. ***A protocol using an alkali Blotting procedure for the analysis of restriction length fragments of human DNA***. Advances in Forensic Haemogenetics, 2: pp339-345, 1988.
- Shikama, K. ***Effect of freezing and thawing on the stability of double helix of DNA***. Nature, 207: p529, 1965.

Application Notes

- Evaluation of Biomatrix DNASTable room temperature DNA storage system
- DNASTable® protects genomic DNA from degradation under high pressure and extreme temperatures above 120°C
- DNASTable® protects plasmid DNA stressed at high temperature
- DNASTable® protects plasmid DNA from UV-C irradiation
- DNASTable® preserves genomic DNA for long-term storage
- DNASTable® preserves plasmid DNA for long-term storage
- Long-term storage of oligonucleotides in DNASTable®
- DNASTable® with the Nanogen® Genotyping System
- Performance of DNASTable® with the Illumina® Human 610 BeadChip™

DNASTABLE® BLOOD (ALSO KNOWN AS QIASAFE® DNA BLOOD)

Poster

- Thomas Doedt, Sohela de Rozieres, Rita Kist, Dirk Heckel and Rolf Muller. "*QIAsafe DNA Blood: A New Technology for Ambient Temperature Storage*". Poster presentation at the ISBER 2010 Annual Meeting & Exhibit, Rotterdam, Netherlands.

RNASTABLE® AND RNA STABILITY

Articles

- Ohgi, S., Coulon, L., Muller, R., Muller-Cohn, J., Clement, O. *Stabilizing RNA at room temperature stabilization in RNASTable*, Biotechniques, **2010**, 48(6), 470.
- Hernandez GE, Mondala TS and Head SR, *Assessing a novel room temperature RNA storage medium for compatibility in microarray gene expression analysis*, Biotechniques, **2009**, 47(2): 667-670.
- Ohgi, Sharron. *Making RNA more durable at room temperature*. Genetic Engineering and Biotechnology News, **2007**, 27: (18).

Application Notes

- RNA Stabilization at Room Temperature in RNASTable®
- Improved QPCR Analysis Following Storage in RNASTable®, by Rhada Gopal and Fernando P. Monroy.
- Microarray Analysis of RNA in RNASTable®, Vince Funari, Ph. D., Cedars-Sinai Medical Center, Los Angeles, CA.
- miRNA Stabilization in RNASTable®
- Stabilization of poly(A) mRNA transcripts in RNASTable®

PCRBOOST™ AND STRBOOST™

Articles & Posters

- Davis, M.C., Le, L., Clabaugh, K., Trogdon, C., Nhan, P., Odigie, K., Lee, S., Hampikian, G. *The PCR enhancer STRBoost™ overcomes inhibitors in STR and mitochondrial microsequencing reactions*. Forensic Science International – Genetics, **2011**, submitted.
- Anderson, K., Bilous, P. *A comparison of PCR amplification methods to obtain DNA profiles from UV degraded DNA*. Poster presentation at Eastern Washington University Forensic Symposium. **2009**.
- Baker, B., Trogdon, C., Lee, S. *Analysis of (N-4)bp STR Repeat Slippage on Low-quantity DNA Samples with PCR Boost*, **2011**. 63rd AAFS Meeting, Chicago, IL (2011).
- Linda Le, Kimberly Clabaugh, Clarisa Trogdon, Andrew Chang, Marissa Meininger, Michael D. Coble, Odile Loreille, Melissa Scheibel, Rachel Demara, Sohela de Rozieres, Martin Latterich, Rolf Muller and Steven B. Lee. *Recovering DNA profiles from low quantity and low quality forensic samples*. A poster presentation at the 19th International Symposium on Human Identification meeting, Hollywood, CA, October **2008**.

Application Notes

- PCRboost™: A Novel PCR Amplification Enhancer
- STRboost™: A Novel STR Amplification Enhancer

DNAGARD® TISSUE AND CELLS

Posters

- Steven Wilkinson, Billy Law, Scott Whitney, Laurent Coulon, Omo Clement, Lutfunnessa Shireen, Angela Stassinopoulos, Judy Muller-Cohn, and Rolf Muller, *Innovative technology to stabilize DNA at room temperature in tissues and cells*, Poster presentation at the Experimental Biology 2010 meeting, Anaheim, CA, April 21-24, 2010.
- Steven P. Wilkinson, Angela Stassinopoulos, Lutfunnessa Shireen, Alex Berner, Miladin Kostovic, Fiona Black, Rob Cohen, Laurent Coulon, Minerva Contreras, Jason Downing, Andre Eggen, Kimberley Gietzen, Diane Lince, Marylinn Munson, Rolf Muller. *Impact of collection, stabilization and isolation of bovine ear punches on high and low density genotyping arrays*. A Poster presentation at the 32nd Conference of the International Society of Animal Genetics (ISAG), Edinburgh, Scotland, July 26-30, 2010.

Application Notes

- Eva Hřibová, Pavla Christelová, Jana Čížková, Jaroslav Dolezel, *DNAgard Tissues & Cells preserves plant tissue at room temperature*. 2011.
- Steven Wilkinson, Sohela de Rozieres, Rolf Muller and Laurent Coulon. *Room temperature preservation of gDNA quality in tissue specimens and culture cells with DNAgard™*

SUSTAINABLE SOLUTIONS/STORAGE AND MANAGEMENT

Articles

- Clement, O., Muller, R., Muller-Cohn, J. *A Warmer Reception*, European Pharmaceutical Contractor Magazine, Dec 2010. http://www.biomatrica.com/downloads/EPC_article_Dec2010.pdf
- Clement, O. *Biological sample storage and management*, Lab Manager Magazine: **2009**, 26-29.
- Jensen, G. *Fact Sheet: Room temperature storage saves energy*, **2009**, http://sustainable.stanford.edu/sites/sem.stanford.edu/files/documents/Stanford_room_temp_storage_fact_sheet.pdf
- Jensen, G. *Room Temperature Biological Sample Storage*; May **2009**: http://sustainablestanford.stanford.edu/sites/sem.stanford.edu/files/documents/Stanford_Room_Temp_Pilot_May09.pdf
- Application Note (April **2009**): [Increasing Sustainability on University Campuses](#)
- The Economist. *Trading Thin Air*. Published May 31, **2007**: http://www.economist.com/node/9217960?story_id=9217960

- *Report of the European Conference on Funding Basic Research in the life sciences: exploring opportunities for European synergies*, accessed 13 December 2004, http://ec.europa.eu/research/health/genomics/funding/bru_aim_en.htm
- Iyengar, G.V., Subramanian, K.S., Woittiez Joost, R.W. *Elemental Analysis of Biological Samples: Principle and Practices*, New York: CRC Press, 1997, p82.

BIOMIMICRY

- Meyers, T. *Consider the Tardigrade*, Hemispheres Magazine, United Airlines, Jan 2011 <http://www.hemispheresmagazine.com/2011/01/01/consider-the-tardigrade/>
- Burke, M., Cavanaugh, M. *Biomimicry Draws From The Natural World For Sustainable Design*, KPBS, September 21, 2010 <http://www.kpbs.org/news/2010/sep/21/biomimicry-draws-natural-world-design-sustainable-/>.
- Crowe, J.H., Carpenter, J.F., Crowe, L.M. *The Role of Vitrification in Anhydrobiosis*, Annu Rev Physiol., 1998, 60: p73.
- Crowe, J.H., Madin, K.A. *Anhydrobiosis in tardigrades and nematodes*, Amer (trans), Micros Soc., 1974, 93: 513-524.
- Clegg, J.S. *The origin of trehalose and its significance during the formation of encysted dormant embryos of Artemia salina*, Comp Biochem Physiol., 1965, 14: 35-143.
- Clegg, J.S. *Do dried cryptobiontes have a metabolism?* Anhydrobiosis pp141-146, 1973
- Clegg, J.S. *Residual water content of dried but viable cells*, Experientia, 1978, 34: pp734-735.

ORGANIZATIONS RECOMMENDING USE OF BIOMATRICA PRODUCTS

- Empire Genomics: <http://www.empiregenomics.com/main/resources/faq/167-prepare-rna-sample-for-mailing>
- Center for Functional Genomics (CFG)/DNA Microarray Facility at The Scripps Research Institute: <http://www.functionalgenomics.org/static/consortium/resources/resourcecoree2.shtml>
- Microarray Facility at The Hospital For Sick Kids: http://www.tcag.ca/Microarray/09_10_RNAAnalysisRequestForm.pdf
- Phalanx Biotech: <http://www.phalanxbiotech.com/Products/rnastable.html>

ADDITIONAL WEB LINKS REFERENCING BIOMATRICA'S TECHNOLOGY

- National Institute of Justice: <http://www.cstl.nist.gov/strbase/NIJ/Biomatrica.htm>, http://www.cstl.nist.gov/strbase/pub_pres/NIST_Update_SWGDAM_%20Jan2008.pdf
- Stanford University: <http://medfacilities.stanford.edu/sustainability/downloads/RoomTempStoragePilotResults.pdf>

- Lab Manager Magazine: <http://www.labmanager.com/articles.asp?ID=271>
- Kevin Duerink Genealogy Page: <http://www.duerinck.com/archvdna.html>
- Bitesize Bio: <http://bitesizebio.com/2008/04/10/5-products-that-could-make-your-lab-life-easier/>
- RFID Monthly: <http://www.rfid-monthly.com/wp-content/uploads/2009/12/RFID-Monthly-December-09.pdf>
- UCSB: http://sustainability.ucsb.edu/conference/docs/2009Conference_Program.pdf
http://sustainability.ucsb.edu/conference/presentations/energy_innovative%20technologies%20in%20labs_Susan%20Kulakowski%20and%20Jensen.pdf