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BOOK REVIEW

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Review of: *Forensic DNA Analysis: A Laboratory Manual*

REFERENCE: McClintock JT. Forensic DNA analysis: a laboratory manual. Boca Raton, FL: CRC Press, 2008, 176 pp.

Forensic DNA Analysis: A Laboratory Manual is a document in search of an audience, an editor, and a small-time warp. If you are a veteran DNA analyst looking for a book that will leave you saying "Yeah, I remember when we used to do that," you are in luck. Otherwise, walk away.

The Manual is divided into 15 chapters, ranging from standard DNA isolation techniques to Y-STR and mtDNA analyses. The first chapters are indeed designed as a lab manual, with reasonably thorough cook book methods for Chelex extractions, organic extractions, agarose gels, and the like. Also covered are Southern blotting and multilocus VNTR analyses (the main focus of the manual; Chapter 7 and others), DQ A1 and Polymarker (Chapter 9), and D1S80 (Chapter 10). If this information is dated, then it is at least consistent with citations in the References and Suggested Readings section, as the most recent one is 10 years old.

Besides a protocol for D1S80, the PCR-based chapters (8–15) contain a list of needed supplies, but virtually no other actual instructions, making them of little use in a lab manual. STRs are covered in Chapters 11 and 12, but unless you can find an ancient Promega triplex kit, much less resolve the amplicons on an agarose gel, you are out of luck. Chapter 12 is a single "case study" involving PowerPlex 16 profiles for a mother, child, and two potential fathers. The last chapters on Y-STRs and mtDNA have obviously been added in the past few years, and consist of nothing but a few results.

It is not clear who the target audience is for this manual. Certainly the material is far too simple for the practicing forensic community. A couple of the chapters might be useful for an undergraduate level forensic science course, particularly as most of the exercises are designed in a mock fashion (utilizing cell culture DNA), although any competent instructor could do a much better job of presenting the material. Mostly, the manual reads like a collection of old protocols that have been variably and carelessly updated over time, with Y-STRs and mtDNA thrown in at the end.

Beyond overall weak content, errors and nonsequiturs are rampant. Here are some examples:

1. In Chapter 2, we are told in the very first sentence that "With the exception of white blood cells, DNA is found in every human cell."
2. Chapter 5 details the use of a Microcon column, a worthwhile technique. The clear instructions are to add 500 μL of water to the Microcon, along with the 500 μL aqueous layer from your organic extraction. You can see the messy overflow problem that is going to occur, and feel sorry for the reader who does not realize the author interchanges Microcons and Centricons.
3. On page 10, during an organic extraction, we are instructed to "Add 500 μl to each tube…" but are never told what to actually add. The same section lets us know that the function of Chelex is to bind proteins (p. 9), and later, after precipitation we should "Resuspend the DNA at 56°C for no more than 2 hrs. To assist in dissolving the pellet, the sample can be heated to 37°C" (p. 18).

A sampling of problems in subsequent sections includes setting up a 25 Fl (sic) reaction (p. 87), telling us that the human genome "encode(s) over 100,000 genes" (p. 71; two mistakes there), instructing us to add 4 μL of DNA to 2 μL of loading dye, but do not exceed 20 μL (p. 32), and dozens of other useless or incorrect things. For a novice, trying to follow this manual would be an exercise in never ending frustration.

Forensic DNA Analysis: A Laboratory Manual is out of date on arrival, and extremely poorly presented and edited. Errors and inconsistencies exist throughout, and half the experiments could not be performed even if one wanted to, because the kits are no longer in existence. The remaining modern techniques are covered only superficially, and certainly not in a lab manual format, thus there is no way one could actually conduct those experiments if desired. I cannot recommend this book to either trainees in today's forensic science laboratories or students in high schools or colleges that might be interested in a basic, entry level text on DNA analysis.

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