Practical Lab Tips

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1) Your number one concern is safety. Always maintain a safe working environment.
2) Closely related to #1: maintain excellent laboratory technique. Not only will you be mindful of safety, but your data will be good, reproducible, reliable, and strong.
3) Nobody is perfect. If you make a mistake, admit it, then do your best to remedy the problem. There's a saying in the D.C. area, "The cover-up is worse than the crime." Never "BS."
4) Be mindful of what your hands are doing at all times; contamination does not spontaneously occur. Keep them out of your mouth, especially in the lab (common problem from techs to PhDs). Keep your hands out of your pockets in the lab; door knobs and pockets are common points of contamination.
5) Do not wear loose clothing or ties in a laboratory. If you have long hair, consider braiding it or putting it in a ponytail. Wear foot-encasing closed-toe shoes; no sandals, even with socks. If you need vision correction, use glasses, not contacts.
6) Regarding PCR and post-PCR product contamination: PCR products are like sand on a beach—you walk on the beach and you are bound to pick up sand and bring it into your house. That sand is harmless as it is. Now, imagine that sand doubling once, twice…up to 30X and that is like PCR contamination in a reaction tube.
    a. Have separate rooms for DNA preparation, PCR set up, and post-PCR work (running gels, genetic analyzers, etc.). Maximize amplicon containment.
    b. Keep dedicated instruments in each room (e.g., one set of micropipettes in the set-up room, another set in the post-PCR room, etc.). Keep dedicated workstations (e.g., DNA isolation hood) with tools within the room.
    c. Change gloves regularly and always before leaving a post-PCR work area. Also, a good idea is to have a separate lab coat in each room (same principles as in #6b).
    d. Use pre-sterilized consumables whenever possible. Use the "dirty" autoclave for lab waste and post-PCR products and not sterilize "clean" items. Autoclave steam spreads but does not incinerate template DNA; it only kills bugs.
    e. Use aerosol-resistant tips.
    f. Even though most post-PCR products are "safe," treat them products like radioactive isotopes—or more simply handle them like you just touched wet paint—to prevent contamination.
    g. Do not lean on benches.
    h. Handle only what is necessary; see item #4.
    i. Have only what is needed in PCR areas, especially post-PCR.
    j. Limit access to PCR areas to only people needing to work there.
    k. Clean-up with 10% bleach or equivalent.
7) Go ahead and read the literature, but don't let it become a Bible. There are so many bad publications. Go to some of these science meetings and check out the poster sessions. Lots of posters look impressive, right? Chat with the people presenting the posters. In the first few minutes, you'll figure out who's doing great work, who's not, and who's plain sloppy. Now you have an idea of your peers. Most of these guys are going to publish something within the next five years. Scary, huh?
8) Don't get hyped or intimidated by big-name labs or people. Usually, the bigger the name is, the more problems they have. Some big shots get annoyed with findings contrary to theirs; then you are left to tell your boss, "I've done all the tests I can. Now I can only recommend confirmation testing at another facility." No one should ever be able to dispute your data (see item #2).
9) Get your cell lines from a reputable source, not that nice guy down the hall, for a lot of reasons. In one specific case, a researcher did the latter, invested years of work, made three derived cell lines, and published. Turns out the starting material she got was contaminated with another cell line that soon overtook the culture. Retractions are never fun to write, but at least she wrote one; even worse is when the retraction is never written (supports claims made in item #7).
10) Always be respectful to other people, even if they do poor work. Take cooperative approaches, where everyone's common goal is to produce good, meaningful work and cure the disease, identify the criminal, or whatever. Slash and burn approaches create unnecessary tension. Always keep your cool; never lose your temper.
11) Be flexible, willing to learn anything, and evolve. When a technique or approach is presented to you, accept it with a beginner's mind, even if you already know the concept. First, you might pick up some new detail. Second, if you know it to the letter already, you get to see how good the guy is giving you the instruction.
12) "Past performance is no guarantee of future results." It's who you are and what you are doing, not what you are or have that counts.
13) Step up to the plate and show your boss you have initiative and a good work ethic, but don't be pushy.
14) Your education is fine as a foundation. There's no substitute for experience. Now you must exit the "Imaginary World of Academia" and enter the "Real World," where things aren't always as they seem, the path is full of anomalies and kinks, and it's up to you to make sense of it all.
15) "The most exciting phrase to hear in science, the one that heralds new discoveries, is not 'Eureka!' (I found it!) but 'That's funny.'" —Isaac Asimov