

# The importance of traceability

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Food processors know about the term traceability as it relates to the movement of product and steps within the production process; but, what about laboratory quality control (QC) traceability?

Have you ever wondered where your QC micro-organism strains originate from or what is your QC micro-organism strain's traceability? Food testing laboratories worldwide use QC micro-organisms to validate, verify, monitor and control the detection of foodborne pathogens and ensure product safety. Many industry standards and regulatory agencies require food manufacturers to monitor and prevent microbiological contamination. QC micro-organisms come from a variety of sources; but they are not all the same. An important factor that must be considered when choosing a supplier of reference materials is traceability. Traceability refers to the completeness of the information about every step in a process chain. It is the ability to verify the history, location, or application of an item by means of documented and recorded identification. For QC micro-organisms, traceability is critical. Without the provider's traceability, you could end up with micro-organisms that have been subjected to excessive subculturing, have been misidentified, contaminated or stored under conditions which could lead to mutation. If adequate traceability is not maintained, test results could be compromised, which may lead to serious consequences such as failure to detect pathogens in food samples.

The EU and the USA regulations require all food and feed producing companies to be able to trace their products and ingredients. It is just as important to know and understand the traceability of the quality control micro-organisms you are testing these products and ingredients against. How can you, after meticulously documenting the traceability of your materials throughout your product and process chain, neglect the traceability of the very materials you use to assure the world that your product is safe?

To support a claim of traceability you should look to the elements outlined by the National Institute of Standards and Technology:

- A clearly defined particular quantity that has been measured.
- A complete description of the measurement system or working standard used.
- A stated measurement result or value, with documented uncertainty.
- A complete specification of the stated reference at the time the measurement system or working standard was compared to it.
- An internal assurance program to establish the status of the measurement system or working standard at all times pertinent to the claim of traceability.
- An internal measurement assurance program to establish the status of the stated reference at the time that the measurement system or working standard was compared to it.

Today, several internationally recognised culture collections have partnered with commercial manufacturers to establish licensing programs that ensure the quality and integrity of the microbial ingredients contained in their products.

Manufacturers must meet certain quality requirements and undergo audits in order to obtain a license to commercially produce and sell micro-organism derivative products. Only a licensed commercial manufacturer can claim their microbial strains are traceable to an individual culture collection. A supplier should provide documentation or evidence that a QC micro-organism strain is traceable to its original source.

In addition to strain traceability, laboratories must also consider supply chain traceability for their micro-organisms. There are significant responsibilities that come with developing, handling, shipping, storing, using and disposing of biological materials in a way that preserves the highest possible standards for health, safety and the environment. Some manufacturers are now requiring laboratories to register their company information, including shipping address, in order to purchase biological material.

By registering every company that purchases their biological materials, a manufacturer is taking extra steps to ensure public health and safety by having complete documentation of the chain of custody from the manufacturer to the end-user.

"Our organisation is devoted to biological resource management and in its role in supporting public health, we are acutely attentive to the provenance and quality of the materials we provide," Dr Brian Pollok, ATCC President, told International Food Hygiene. "Whether in quality control testing, proficiency testing, or process validation, the source of the microbial strains used is vital in achieving reliable results. Quality control strains that carry the ATCC Licensed Derivative emblem are assured and traceable to a validated origin."

Laboratory technicians deserve to be certain that the materials they use are identified correctly and are traceable to a relevant source.

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