

MicroBioLogics®

Selection of Water Microbiology Quality Control (QC) Microorganism Challenges

Microbiology quality control guidelines continue to evolve and find definition in water microbiology testing laboratories. This evolution, through the implementation of NELAP, changing state-mandated guidelines, privatization of proficiency testing programs, and the introduction of new products has presented many challenges to laboratories that test water samples.

Good quality control programs lend credibility to the results a laboratory releases. The appropriate quality control measures support all aspects of the laboratory's sampling and testing processes. This can range from inhibitory substances on glassware, media and product quality control, process controls, and the documentation of an analyst's ability to perform his or her assigned tasks.

The following table lists recommended positive and negative controls for several groups of microorganisms commonly targeted in water testing methods.

Group Targeted	Positive Control	Negative Control
Total Coliform	Escherichia coli	Staphylococcus aureus
	Enterobacter aerogenes	Pseudomonas species
Fecal Coliform	Escherichia coli	Enterobacter aerogenes
		Enterococcus faecalis
Fecal Streptococci	Enterococcus faecalis	Staphylococcus aureus
		Escherichia coli
Enterococci	Enterococcus faecalis	Streptococcus mitis
		Streptococcus salivarius
Heterotrophic Plate Count	Kocuria rhizophila	Not applicable

MicroBioLogics®, through its own experience and the experience of its customers, has developed the following list of recommended strains for use in a water microbiology laboratory's quality control program. **This list is not intended to replace or supersede individual product manufacturer's recommended quality control panels.** This Technical Information Bulletin is intended to narrow down the vast list of microorganism strains available to water laboratories today. The following strains of microorganisms have been utilized with Presence/Absence, Membrane Filtration (both drinking and wastewater analysis) and Most Probable Number (MPN) methodologies. The strains have exhibited the appropriate or expected characteristics in all core methods.


Catalog #	Microorganism Strain
0483	Escherichia coli ATCC® 8739™*
0791	Escherichia coli ATCC® 51813™*
0422	Escherichia coli ATCC® 35421™*
0495	Escherichia coli ATCC® 35218™*
0306	Enterobacter aerogenes ATCC® 13048™*
0388	Enterobacter cloacae ATCC® 35030™ *
0683	Klebsiella pneumoniae ATCC® 4352™*
0351	Klebsiella pneumoniae ATCC® 13883™*
0416	Pseudomonas aeruginosa ATCC® 10145™*
0690	Proteus mirabilis ATCC® 25933™*
0360	Staphylococcus aureus ATCC® 25923™*
0367	Enterococcus faecalis ATCC® 19433™*
0366	Enterococcus faecalis ATCC® 29212™*
0497	Enterococcus faecalis ATCC® 7080™*
0688	Kocuria rhizophila ATCC® 9341™*

MicroBioLogics offers each of the microorganism strains listed above in three packaging configurations: LYFO DISK®, KWIK-STIK™ 2 Pack and KWIK-STIK™ 10 Pack.

The strains listed in bold are also available as Epower™ microorganism preparations for applications where the use of an enumerated product may be required or preferred, such as Membrane Filtration or Heterotrophic Plate Count. Refer to MicroBioLogics LIT.248 for illustrated instructions demonstrating how to use E3 Epower™ microorganism preparations as controls for Membrane Filtration.

Please contact MicroBioLogics® Technical Support for assistance with any other application questions.

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