



Glowing Products for Science™

www.biotium.com

Revised: August 5, 2021

Selected PMA & PMAXx™ References

[Click on the blue link to see journal article](#)

Contents:

The use of PMA for viability PCR in bacteria has been published in hundreds of journal articles. Publications using PMA in select applications and sample types have been selected below. See the separate [Validated Strains](#) list for a complete list of bacteria strains in which PMA has successfully been used.

Viability PCR Reviews

- [PMA Reviews](#) p. 1

Viability PCR Dyes

- [PMAXx™](#) p. 2

Related Products

- [PMA-Lite™](#) p. 4
- [Glo-Plate™](#) p. 5
- [PMA Enhancer](#) p. 5

PMA References by Sample Type

- [Bacteria](#) p. 5
- [Yeast and Fungi](#) p. 22
- [Biofilms](#) p. 23
- [Eukaryotes](#) p. 24
- [Viruses](#) p. 25
- [Archaea](#) p. 28

PMA References by Application

- [Clinical Samples](#) p. 29
- [Food Science](#) p. 29
- [Probiotics](#) p. 34
- [Environmental Testing](#) p. 35
- [Filtered Samples](#) p. 38

PMA References by Techniques

- [Sequencing](#) p. 38
- [Isothermal Amplification \(LAMP\)](#) p. 41
- [Droplet Digital PCR \(ddPCR\)](#) p. 42
- [Real-time PCR \(RT-PCR\)](#) p. 42

Viability PCR Reviews

PMA Reviews

Baymiev, A. K., et al. [Modern Approaches to Differentiation of Live and Dead Bacteria Using Selective Amplification of Nucleic Acids](#). Microbiology 89(1), 13-27, (2020), DOI: 10.1134/s0026261720010038
(PMA, PMA-Lite, Glo-Plate, review)

Elizaquivel, P., et al. [Recent developments in the use of viability dyes and quantitative PCR in the food microbiology field](#). J Appl Microbiol 116(1), 1-13, (2013), DOI: 10.1111/jam.12365

Emerson, J. B., et al. [Schrodinger's microbes: Tools for distinguishing the living from the dead in microbial ecosystems](#). Microbiome 5(1), 86, (2017), DOI: 10.1186/s40168-017-0285-3

Fittipaldi, M., et al. [Progress in understanding preferential detection of live cells using viability dyes in combination with DNA amplification](#). J Microbiol Methods 91(2), 276-289, (2012), DOI: 10.1016/j.mimet.2012.08.007

Greening, G. [Foodborne viruses: a focus on challenges associated with detection methods](#). Microbiology Australia DOI: 10.1071/MA13022, (2013), DOI: 10.1071/MA13022

Li, Y., et al. [The novel loop-mediated isothermal amplification based confirmation methodology on the bacteria in Viable but Non-Culturable \(VBNC\) state](#). Microb Pathog 111, 280-284, (2017), DOI: 10.1016/j.micpath.2017.09.007

van Frankenhuyzen, J. K., et al. [Molecular pathogen detection in biosolids with a focus on quantitative PCR using propidium monoazide for viable cell enumeration](#). J Microbiol Methods 87(3), 263-272, (2011), DOI: 10.1016/j.mimet.2011.09.007

Viability PCR Dyes

PMAxx™

Abdullah, N., et al. [The antibacterial efficacy of silver diamine fluoride \(SDF\) is not modulated by potassium iodide \(KI\) supplements: A study on in-situ plaque biofilms using viability real-time PCR with propidium monoazide](#). PLoS One 15(11), e0241519, (2020), DOI: 10.1371/journal.pone.0241519 (PMAxx, Glo-Plate)

Chamings, A., et al. [An Emerging Human Parechovirus Type 5 Causing Sepsis-Like Illness in Infants in Australia](#). Viruses 11(10), (2019), DOI: 10.3390/v11100913 (PMAxx)

Emerson, J. B., et al. [Schrodinger's microbes: Tools for distinguishing the living from the dead in microbial ecosystems](#). Microbiome 5(1), 86, (2017), DOI: 10.1186/s40168-017-0285-3

Fei, Z., et al. [A novel bioluminescent approach to the loop-mediated isothermal amplification-based detection of Lactobacillus salivarius in feed samples](#). J Microbiol Methods, 106209, (2021), DOI: 10.1016/j.mimet.2021.106209 (Lactobacillus, Feed samples)

Fraisse, A., et al. [Discrimination of infectious and heat-treated norovirus by combining platinum compounds and real-time RT-PCR](#). Int J Food Microbiol 269, 64-74, (2018), DOI: 10.1016/j.ijfoodmicro.2018.01.015

Garcia-Fontana, C., et al. [A New Physiological Role for the DNA Molecule as a Protector against Drying Stress in Desiccation-Tolerant Microorganisms](#). Front Microbiol 7, 2066, (2016), DOI: 10.3389/fmicb.2016.02066

Han, S., et al. [Detection of Clavibacter michiganensis subsp. michiganensis in viable but nonculturable state from tomato seed using improved qPCR](#). PLoS One 13(5), e0196525, (2018), DOI: 10.1371/journal.pone.0196525

Krystel, J., et al. [An in vitro protocol for rapidly assessing the effects of antimicrobial compounds on the unculturable bacterial plant pathogen, Candidatus Liberibacter asiaticus](#). Plant Methods 15, 85, (2019), DOI: 10.1186/s13007-019-0465-1 (Candidatus Liberibacter asiaticus, PMAXx)

Lopez-Galvez, F., et al. [Irrigating Lettuce with Wastewater Effluent: Does Disinfection with Chlorine Dioxide Inactivate Viruses?](#) J Environ Qual 47(5), 1139-1145, (2018), DOI: 10.2134/jeq2017.12.0485 (PMAXx, enteric viruses, wastewater irrigation, food testing)

Navarro, Y., et al. [Viability-PCR Allows Monitoring Yeast Population Dynamics in Mixed Fermentations Including Viable but Non-Culturable Yeasts](#). Foods 9(10), (2020), DOI: 10.3390/foods9101373 (PMAXx, VBNC, Yeast)

Ohno, A., et al. [Rapid profiling of drug-resistant bacteria using DNA-binding dyes and a nanopore-based DNA sequencer](#). Sci Rep 11(1), 3436, (2021), DOI: 10.1038/s41598-021-82903-z (PMAXx, drug resistant bacteria)

Oristo, S., et al. [Performance of pre-RT-qPCR treatments to discriminate infectious human rotaviruses and noroviruses from heat-inactivated viruses: applications of PMA/PMAXx, benzonase and RNase](#). J Appl Microbiol 124(4), 1008-1016, (2018), DOI: 10.1111/jam.13737 (norovirus, Rotavirus, RT-PCR)

Randazzo, W., et al. [Optimization of PMAXx pretreatment to distinguish between human norovirus with intact and altered capsids in shellfish and sewage samples](#). Int J Food Microbiol 266, 1-7, (2018), DOI: S0168-1605(17)30505-6 [pii] 10.1016/j.ijfoodmicro.2017.11.011

Randazzo, W., et al. [Evaluation of viability PCR performance for assessing norovirus infectivity in fresh-cut vegetables and irrigation water](#). Int J Food Microbiol 229, 1-6, (2016), DOI: 10.1016/j.ijfoodmicro.2016.04.010

Randazzo, W., et al. [Interlaboratory Comparative Study to Detect Potentially Infectious Human Enteric Viruses in Influent and Effluent Waters](#). Food Environ Virol, (2019), DOI: 10.1007/s12560-019-09392-2

Randazzo, W., et al. [Improving efficiency of viability-qPCR for selective detection of infectious HAV in food and water samples](#). J Appl Microbiol 124(4), 958-964, (2018), DOI: 10.1111/jam.13519

Randazzo, W., et al. [Viability RT-qPCR to Distinguish Between HEV and HAV With Intact and Altered Capsids](#). Front Microbiol 9, 1973, (2018), DOI: 10.3389/fmicb.2018.01973

Razafimahefa, R. M., et al. [Optimisation of a PMAXx-RT-qPCR Assay and the Preceding Extraction Method to Selectively Detect Infectious Murine Norovirus Particles in Mussels](#). Food Environ Virol 13(1), 93-106, (2021), DOI: 10.1007/s12560-020-09454-w (PMAXx, Murine Norovirus, mussels)

Roumani, F., et al. [Loop-mediated isothermal amplification combined with immunomagnetic separation and propidium monoazide for the specific detection of viable Listeria monocytogenes in milk products, with an internal amplification control](#). Food Control 125, (2021), DOI: 10.1016/j.foodcont.2021.107975 (LAMP, Listeria, PMAXx)

Rousseau, A., et al. [Evaluation of propidium monoazide-based qPCR to detect viable oocysts of Toxoplasma gondii](#). Parasitol Res 118(3), 999-1010, (2019), DOI: 10.1007/s00436-019-06220-1 10.1007/s00436-019-06220-1 [pii]

Sicard, A., et al. [Discriminating between viable and membrane-damaged cells of the plant pathogen *Xylella fastidiosa*](#). PLoS One 14(8), e0221119, (2019), DOI: 10.1371/journal.pone.0221119

Zhu, X., et al. [Effect of a Multistarter Yeast Inoculum on Ethanol Reduction and Population Dynamics in Wine Fermentation](#). Foods 10(3), (2021), DOI: 10.3390/foods10030623 (PMAxx, Yeast in wine must)

Related Products

PMA-Lite™

Burnet, J. B., et al. [How does the cladoceran *Daphnia pulex* affect the fate of *Escherichia coli* in water?](#). PLoS One 12(2), e0171705, (2017), DOI: 10.1371/journal.pone.0171705

Checinska Sielaff, A., et al. [Characterization of the total and viable bacterial and fungal communities associated with the International Space Station surfaces](#). Microbiome 7(1), 50, (2019), DOI: 10.1186/s40168-019-0666-x

Eramo, A., et al. [Peracetic acid disinfection kinetics for combined sewer overflows: indicator organisms, antibiotic resistance genes, and microbial community](#). Environ Sci (Camb) 3(6), 1061-1072, (2017), DOI: 10.1039/C7EW00184C

Fang, J., et al. [Propidium monoazide real-time loop-mediated isothermal amplification for specific visualization of viable *Salmonella* in food](#). Lett Appl Microbiol 67(1), 79-88, (2018), DOI: 10.1111/lam.12992

Moussa, D. G. and Aparicio, C. [Targeting the oral plaque microbiome with immobilized anti-biofilm peptides at tooth-restoration interfaces](#). PLoS One 15(7), e0235283, (2020), DOI: 10.1371/journal.pone.0235283 (PMA, PMA-Lite, dental plaque, biofilm)

Oh, E., et al. [Impact of oxidative stress defense on bacterial survival and morphological change in *Campylobacter jejuni* under aerobic conditions](#). Front Microbiol 6, 295, (2015), DOI: 10.3389/fmicb.2015.00295

Overney, A., et al. [Impact of environmental factors on the culturability and viability of *Listeria monocytogenes* under conditions encountered in food processing plants](#). Int J Food Microbiol 244, 74-81, (2017), DOI: S0168-1605(16)30660-2 [pii] 10.1016/j.ijfoodmicro.2016.12.012

Roumani, F., et al. [Loop-mediated isothermal amplification combined with immunomagnetic separation and propidium monoazide for the specific detection of viable *Listeria monocytogenes* in milk products, with an internal amplification control](#). Food Control 125, (2021), DOI: 10.1016/j.foodcont.2021.107975 (LAMP, *Listeria*, PMAxx)

Shah, M. K., et al. [Salmonella enterica in Soils Amended with Heat-Treated Poultry Pellets Survived Longer than Bacteria in Unamended Soils and More Readily Transferred to and Persisted on Spinach](#). Appl Environ Microbiol 85(10), (2019), DOI: 10.1128/AEM.00334-19 (

Yang, Y., et al. [Effects of monochloramine and hydrogen peroxide on the bacterial community shifts in biologically treated wastewater](#). Chemosphere 189, 399-406, (2017), DOI: S0045-6535(17)31500-X [pii] 10.1016/j.chemosphere.2017.09.087

Zhang, Z., et al. [Quantifying viable *Vibrio parahaemolyticus* and *Listeria monocytogenes* simultaneously in raw shrimp](#). Appl Microbiol Biotechnol 99(15), 6451-6462, (2015), DOI: 10.1007/s00253-015-6715-x

Zheng, Q., et al. [Growth of healthy and sanitizer-injured *Salmonella* cells on mung bean sprouts in different commercial enrichment broths](#). Food Microbiol 52, 159-168, (2015), DOI: S0740-0020(15)00146-X

Glo-Plate™

Baymiev, A. K., et al. [Modern Approaches to Differentiation of Live and Dead Bacteria Using Selective Amplification of Nucleic Acids](#). Microbiology 89(1), 13-27, (2020), DOI: 10.1134/s0026261720010038 (PMA, PMA-Lite, Glo-Plate, review)

Krystel, J., et al. [An in vitro protocol for rapidly assessing the effects of antimicrobial compounds on the unculturable bacterial plant pathogen, *Candidatus Liberibacter asiaticus*](#). Plant Methods 15, 85, (2019), DOI: 10.1186/s13007-019-0465-1 (*Candidatus Liberibacter asiaticus*, PMAxX)

Abdullah, N., et al. [The antibacterial efficacy of silver diamine fluoride \(SDF\) is not modulated by potassium iodide \(KI\) supplements: A study on in-situ plaque biofilms using viability real-time PCR with propidium monoazide](#). PLoS One 15(11), e0241519, (2020), DOI: 10.1371/journal.pone.0241519 (PMAxX, Glo-Plate)

PMA Enhancer

Shah, M. K., et al. [Salmonella enterica in Soils Amended with Heat-Treated Poultry Pellets Survived Longer than Bacteria in Unamended Soils and More Readily Transferred to and Persisted on Spinach](#). Appl Environ Microbiol 85(10), (2019), DOI: 10.1128/AEM.00334-19 (

Sicard, A., et al. [Discriminating between viable and membrane-damaged cells of the plant pathogen *Xylella fastidiosa*](#). PLoS One 14(8), e0221119, (2019), DOI: 10.1371/journal.pone.0221119

Youn, S. Y., et al. [Application of loop-mediated isothermal amplification with propidium monoazide treatment to detect live *Salmonella* in chicken carcasses](#). Poult Sci, (2016), DOI: pew341

PMA References by Sample Type

Bacteria

Agusti, G., et al. [Viability determination of *Helicobacter pylori* using propidium monoazide quantitative PCR](#). Helicobacter 15(5), 473-476, (2010), DOI: 10.1111/j.1523-5378.2010.00794.x

Alvarez, G., et al. [Method to quantify live and dead cells in multi-species oral biofilm by real-time PCR with propidium monoazide](#). AMB Express 3(1), 1, (2013), DOI: 10.1186/2191-0855-3-1

Atia, A., et al. [Study and Understanding Behavior of Alginate-Inulin Synbiotics Beads for Protection and Delivery of Antimicrobial-Producing Probiotics in Colonic Simulated Conditions](#). Probiotics Antimicrob Proteins, (2017), DOI: 10.1007/s12602-017-9355-x 10.1007/s12602-017-9355-x [pii]

Auld, R. R., et al. [Seasonal variation in an acid mine drainage microbial community](#). Can J Microbiol 63(2), 137-152, (2017), DOI: 10.1139/cjm-2016-0215

Bae, S. and Wuertz, S. [Rapid decay of host-specific fecal Bacteroidales cells in seawater as measured by quantitative PCR with propidium monoazide](#). Water Res 43(19), 4850-4859, (2009), DOI: 10.1016/j.watres.2009.06.053

Bae, S. and Wuertz, S. [Discrimination of viable and dead fecal Bacteroidales bacteria by quantitative PCR with propidium monoazide](#). Appl Environ Microbiol 75(9), 2940-2944, (2009), DOI: 10.1128/AEM.01333-08

Bae, S. and Wuertz, S. [Survival of host-associated bacteroidales cells and their relationship with Enterococcus spp., Campylobacter jejuni, Salmonella enterica serovar Typhimurium, and adenovirus in freshwater microcosms as measured by propidium monoazide-quantitative PCR](#). Appl Environ Microbiol 78(4), 922-932, (2012), DOI: 10.1128/AEM.05157-11

Bae, S. and Wuertz, S. [Decay of host-associated Bacteroidales cells and DNA in continuous-flow freshwater and seawater microcosms of identical experimental design and temperature as measured by PMA-qPCR and qPCR](#). Water Res 70C, 205-213, (2014), DOI: S0043-1354(14)00730-1 [pii] 10.1016/j.watres.2014.10.032

Banihashemi, A., et al. [Long-amplicon propidium monoazide-PCR enumeration assay to detect viable Campylobacter and Salmonella](#). J Appl Microbiol DOI: 10.1111/j.1365-2672.2012.05382.x, (2012), DOI: 10.1111/j.1365-2672.2012.05382.x

Barbau-Piednoir, E., et al. [Evaluation of viability-qPCR detection system on viable and dead Salmonella serovar Enteritidis](#). J Microbiol Methods 103, 131-137, (2014), DOI: 10.1016/j.mimet.2014.06.003

Bauermeister, A., et al. [Quantification of encapsulated bioburden in spacecraft polymer materials by cultivation-dependent and molecular methods](#). PLoS One 9(4), e94265, (2014), DOI: 10.1371/journal.pone.0094265

Be, N. A., et al. [Whole metagenome profiles of particulates collected from the International Space Station](#). Microbiome 5(1), 81, (2017), DOI: 10.1186/s40168-017-0292-4

Be, N. A., et al. [Erratum to: Whole metagenome profiles of particulates collected from the International Space Station](#). Microbiome 5(1), 111, (2017), DOI: 10.1186/s40168-017-0330-2 10.1186/s40168-017-0330-2 [pii]

Bouchiat, C., et al. [Nontuberculous Mycobacteria: An Underestimated Cause of Bioprosthetic Valve Infective Endocarditis](#). Open Forum Infect Dis 2(2), ofv047, (2015), DOI: 10.1093/ofid/ofv047

Boutin, S., et al. [Comparison of Oropharyngeal Microbiota from Children with Asthma and Cystic Fibrosis](#). Mediators Inflamm 2017, 5047403, (2017), DOI: 10.1155/2017/5047403

Boutin, S., et al. [Comparison of microbiomes from different niches of upper and lower airways in children and adolescents with cystic fibrosis](#). PLoS One 10(1), e0116029, (2015), DOI: 10.1371/journal.pone.0116029

Brauge, T., et al. [Comparative evaluation of DNA extraction methods for amplification by qPCR of superficial vs intracellular DNA from Bacillus spores](#). Int J Food Microbiol 266, 289-294, (2018), DOI: S0168-1605(17)30534-2 [pii] 10.1016/j.ijfoodmicro.2017.12.012

Brauge, T., et al. [Viability Detection of Foodborne Bacterial Pathogens in Food Environment by PMA-qPCR and by Microscopic Observation](#). Methods Mol Biol 1918, 117-128, (2019), DOI: 10.1007/978-1-4939-9000-9_9

Burnet, J. B., et al. [How does the cladoceran Daphnia pulex affect the fate of Escherichia coli in water?](#). PLoS One 12(2), e0171705, (2017), DOI: 10.1371/journal.pone.0171705

Caldwell, J. M., et al. [Pectinatus sottacetonis sp. nov. isolated from commercial pickle spoilage tank](#). Int J Syst Evol Microbiol DOI: 10.1099/ijss.0.047886-0, (2013), DOI: 10.1099/ijss.0.047886-0

Cattani, F., et al. [Detection and quantification of viable *Bacillus cereus* group species in milk by propidium monoazide quantitative real-time PCR](#). J Dairy Sci, (2016), DOI: 10.3168/jds.2015-10019

Cattani, F., et al. [The detection of viable vegetative cells of *Bacillus sporothermodurans* using propidium monoazide with semi-nested PCR](#). Food Microbiol 34(1), 196-201, (2013), DOI: 10.1016/j.fm.2012.12.007

Cawthorn, D. M. and Witthuhn, R. C. [Selective PCR detection of viable *Enterobacter sakazakii* cells utilizing propidium monoazide or ethidium bromide monoazide](#). J Appl Microbiol 105(4), 1178-1185, (2008), DOI: 10.1111/j.1365-2672.2008.03851.x

Chang, B., et al. [Comparison of ethidium monoazide and propidium monoazide for the selective detection of viable *Legionella* cells](#). Jpn J Infect Dis 63(2), 119-123, (2010),

Checinska, A., et al. [Microbiomes of the dust particles collected from the International Space Station and Spacecraft Assembly Facilities](#). Microbiome 3, 50, (2015), DOI: 10.1186/s40168-015-0116-3

Chen, S., et al. [Rapid detection of viable salmonellae in produce by coupling propidium monoazide with loop-mediated isothermal amplification](#). Appl Environ Microbiol 77(12), 4008-4016, (2011), DOI: 10.1128/AEM.00354-11

Chiao, T. H., et al. [Differential resistance of drinking water bacterial populations to monochloramine disinfection](#). Environ Sci Technol 48(7), 4038-4047, (2014), DOI: 10.1021/es4055725

Contreras, P. J., et al. [Effect of PCR amplicon length on suppressing signals from membrane-compromised cells by propidium monoazide treatment](#). J Microbiol Methods 87(1), 89-95, (2011), DOI: 10.1016/j.mimet.2011.07.016

Cuthbertson, L., et al. [Respiratory microbiota resistance and resilience to pulmonary exacerbation and subsequent antimicrobial intervention](#). ISME J, (2015), DOI: ismej2015198

Cuthbertson, L., et al. [Time between collection and storage significantly influences bacterial sequence composition in sputum samples from cystic fibrosis respiratory infections](#). J Clin Microbiol 52(8), 3011-3016, (2014), DOI: 10.1128/JCM.00764-14

Cuthbertson, L., et al. [Implications of multiple freeze-thawing on respiratory samples for culture-independent analyses](#). J Cyst Fibros, (2014), DOI: S1569-1993(14)00231-8 [pii] 10.1016/j.jcf.2014.10.004

Da Collina, G. A., et al. [Oral hygiene in intensive care unit patients with photodynamic therapy: study protocol for randomised controlled trial](#). Trials 18(1), 385, (2017), DOI: 10.1186/s13063-017-2133-y

Daniels, T. W., et al. [Impact of antibiotic treatment for pulmonary exacerbations on bacterial diversity in cystic fibrosis](#). J Cyst Fibros DOI: 10.1016/j.jcf.2012.05.008, (2012), DOI: 10.1016/j.jcf.2012.05.008

de Almeida, J., et al. [Effectiveness of EDTA and Modified Salt Solution to Detach and Kill Cells from Enterococcus faecalis Biofilm](#). J Endod 42(2), 320-323, (2016), DOI: S0099-2399(15)01080-8

de Assuncao, T. M., et al. [Real time PCR quantification of viable Mycobacterium tuberculosis from sputum samples treated with propidium monoazide](#). Tuberculosis (Edinb) 94(4), 421-427, (2014), DOI: 10.1016/j.tube.2014.04.008

Del Serrone, P. and Nicoletti, M. [Antimicrobial activity of a neem cake extract in a broth model meat system](#). Int J Environ Res Public Health 10(8), 3282-3295, (2013), DOI: 10.3390/ijerph10083282

Del Serrone, P., et al. [Neem \(Azadirachta indica A. Juss\) Oil to Tackle Enteropathogenic Escherichia coli](#). Biomed Res Int 2015, 343610, (2015), DOI: 10.1155/2015/343610

Del Serrone, P., et al. [Neem \(Azadirachta indica A. Juss\) Oil: A Natural Preservative to Control Meat Spoilage](#). Foods 4(1), 3-14, (2015), DOI: foods4010003 [pii] 10.3390/foods4010003

Deschaght, P., et al. [Is the Improvement of CF Patients, Hospitalized for Pulmonary Exacerbation, Correlated to a Decrease in Bacterial Load?](#). PLoS One 8(11), e79010, (2013), DOI: 10.1371/journal.pone.0079010

Desfosses-Foucault, E., et al. [Assessment of Probiotic Viability during Cheddar Cheese Manufacture and Ripening Using Propidium Monoazide-PCR Quantification](#). Front Microbiol 3, 350, (2012), DOI: 10.3389/fmicb.2012.00350

Desneux, J., et al. [Fate of Viable but Non-culturable Listeria monocytogenes in Pig Manure Microcosms](#). Front Microbiol 7, 245, (2016), DOI: 10.3389/fmicb.2016.00245

Desneux, J., et al. [Experimental design for the optimization of propidium monoazide treatment to quantify viable and non-viable bacteria in piggery effluents](#). BMC Microbiol 15, 164, (2015), DOI: 10.1186/s12866-015-0505-6

Di Maiuta, N., et al. [Assessment of bacteria and archaea in metalworking fluids using massive parallel 16S rRNA gene tag sequencing](#). Lett Appl Microbiol 65(4), 266-273, (2017), DOI: 10.1111/lam.12782

Ditommaso, S., et al. [Viability-qPCR for detecting Legionella: Comparison of two assays based on different amplicon lengths](#). Mol Cell Probes, (2015), DOI: S0890-8508(15)30007-4

Ditommaso, S., et al. [Overestimation of the Legionella spp. load in environmental samples by quantitative real-time PCR: pretreatment with propidium monoazide as a tool for the assessment of an association between Legionella concentration and sanitary risk](#). Diagn Microbiol Infect Dis 80(4), 260-266, (2014), DOI: S0732-8893(14)00372-1 [pii] 10.1016/j.diagmicrobio.2014.09.010

Ditommaso, S., et al. [Legionella in water samples: How can you interpret the results obtained by quantitative PCR?](#). Mol Cell Probes, (2014), DOI: S0890-8508(14)00045-0 [pii] 10.1016/j.mcp.2014.09.002

Dong, S., et al. [Persistence of Bacteroides ovatus under simulated sunlight irradiation](#). BMC Microbiol 14, 178, (2014), DOI: 10.1186/1471-2180-14-178

Duarte, A., et al. [Effect of exposure to stress conditions on propidium monoazide \(PMA\)-qPCR based Campylobacter enumeration in broiler carcass rinses](#). Food Microbiol 48, 182-190, (2015), DOI: S0740-0020(14)00324-4

Edelblute, C. M., et al. [Surface-dependent inactivation of model microorganisms with shielded sliding plasma discharges and applied air flow](#). Bioelectrochemistry, (2014), DOI: 10.1016/j.bioelechem.2014.08.013

Eichmiller, J. J., et al. [Decay of genetic markers for fecal bacterial indicators and pathogens in sand from Lake Superior](#). Water Res 59, 99-111, (2014), DOI: 10.1016/j.watres.2014.04.005

Elizaquivel, P., et al. [Recent developments in the use of viability dyes and quantitative PCR in the food microbiology field](#). J Appl Microbiol 116(1), 1-13, (2013), DOI: 10.1111/jam.12365

Elizaquivel, P., et al. [Application of propidium monoazide-qPCR to evaluate the ultrasonic inactivation of Escherichia coli O157:H7 in fresh-cut vegetable wash water](#). Food Microbiol 30(1), 316-320, (2012), DOI: 10.1016/j.fm.2011.10.008

Eramo, A., et al. [Peracetic acid disinfection kinetics for combined sewer overflows: indicator organisms, antibiotic resistance genes, and microbial community](#). Environ Sci (Camb) 3(6), 1061-1072, (2017), DOI: 10.1039/C7EW00184C

Erkus, O., et al. [Use of propidium monoazide for selective profiling of viable microbial cells during Gouda cheese ripening](#). Int J Food Microbiol 228, 1-9, (2016), DOI: S0168-1605(16)30142-8

Exterkate, R. A., et al. [The effect of propidium monoazide treatment on the measured bacterial composition of clinical samples after the use of a mouthwash](#). Clin Oral Investig, (2014), DOI: 10.1007/s00784-014-1297-z

Fang, J., et al. [Propidium monoazide real-time loop-mediated isothermal amplification for specific visualization of viable Salmonella in food](#). Lett Appl Microbiol 67(1), 79-88, (2018), DOI: 10.1111/lam.12992

Fei, Z., et al. [A novel bioluminescent approach to the loop-mediated isothermal amplification-based detection of Lactobacillus salivarius in feed samples](#). J Microbiol Methods, 106209, (2021), DOI: 10.1016/j.mimet.2021.106209 (Lactobacillus, Feed samples)

Feng, K., et al. [A Dual Filtration-Based Multiplex PCR Method for Simultaneous Detection of Viable Escherichia coli O157:H7, Listeria monocytogenes, and Staphylococcus aureus on Fresh-Cut Cantaloupe](#). PLoS One 11(12), e0166874, (2016), DOI: 10.1371/journal.pone.0166874

Fernandez Ramirez, M. D., et al. [Quantitative assessment of viable cells of Lactobacillus plantarum strains in single, dual and multi-strain biofilms](#). Int J Food Microbiol 244, 43-51, (2017), DOI: S0168-1605(16)30662-6 [pii] 10.1016/j.ijfoodmicro.2016.12.014

Fernandez, Y. M. M., et al. [Effect of mouthwashes on the composition and metabolic activity of oral biofilms grown in vitro](#). Clin Oral Investig, (2016), DOI: 10.1007/s00784-016-1876-2

Fernandez, Y. M. M., et al. [A reproducible microcosm biofilm model of subgingival microbial communities](#). J Periodontal Res 52(6), 1021-1031, (2017), DOI: 10.1111/jre.12473

Forbes, S., et al. [Formulation of Biocides Increases Antimicrobial Potency and Mitigates the Enrichment of Nonsusceptible Bacteria in Multispecies Biofilms](#). Appl Environ Microbiol 83(7), (2017), DOI: AEM.03054-16 [pii] 10.1128/AEM.03054-16

Forghani, F., et al. [Enterotoxigenic profiling of emetic toxin- and enterotoxin-producing *Bacillus cereus*, Isolated from food, environmental, and clinical samples by multiplex PCR](#). J Food Sci 79(11), M2288-2293, (2014), DOI: 10.1111/1750-3841.12666

Fujimoto, J., et al. [Identification and quantification of viable *Bifidobacterium breve* strain Yakult in human faeces by using strain-specific primers and propidium monoazide](#). J Appl Microbiol 110(1), 209-217, (2011), DOI: 10.1111/j.1365-2672.2010.04873.x

Fujimoto, M., et al. [Application of ion torrent sequencing to the assessment of the effect of alkali ballast water treatment on microbial community diversity](#). PLoS One 9(9), e107534, (2014), DOI: 10.1371/journal.pone.0107534

Ganesan, B., et al. [Probiotic bacteria survive in Cheddar cheese and modify populations of other lactic acid bacteria](#). J Appl Microbiol 116(6), 1642-1656, (2014), DOI: 10.1111/jam.12482

Garcia-Fontana, C., et al. [A New Physiological Role for the DNA Molecule as a Protector against Drying Stress in Desiccation-Tolerant Microorganisms](#). Front Microbiol 7, 2066, (2016), DOI: 10.3389/fmicb.2016.02066

Garson, J. A., et al. [Evaluation of an ethidium monoazide-enhanced 16S rDNA real-time polymerase chain reaction assay for bacterial screening of platelet concentrates and comparison with automated culture](#). Transfusion 54(3 Pt 2), 870-878, (2014), DOI: 10.1111/trf.12256

Gensberger, E. T., et al. [Evaluation of quantitative PCR combined with PMA treatment for molecular assessment of microbial water quality](#). Water Res 67, 367-376, (2014), DOI: 10.1016/j.watres.2014.09.022

Gensberger, E. T., et al. [Propidium monoazide-quantitative polymerase chain reaction for viable *Escherichia coli* and *Pseudomonas aeruginosa* detection from abundant background microflora](#). Anal Biochem 441(1), 69-72, (2013), DOI: 10.1016/j.ab.2013.05.033

Gin, K. Y. and Goh, S. G. [Modeling the effect of light and salinity on viable but non-culturable \(VBNC\) *Enterococcus*](#). Water Res 47(10), 3315-3328, (2013), DOI: 10.1016/j.watres.2013.03.021

Gobert, G., et al. [Droplet digital PCR improves absolute quantification of viable lactic acid bacteria in faecal samples](#). J Microbiol Methods 148, 64-73, (2018), DOI: S0167-7012(18)30056-3 [pii] 10.1016/j.mimet.2018.03.004

Gomez-Alvarez, V., et al. [Biofilm community dynamics in bench-scale annular reactors simulating arrestment of chloraminated drinking water nitrification](#). Environ Sci Technol 48(10), 5448-5457, (2014), DOI: 10.1021/es5005208 (biofilm,

Grande Burgos, M. J., et al. [Analysis of the microbiota of refrigerated chopped parsley after treatments with a coating containing enterocin AS-48 or by high-hydrostatic pressure](#). Food Res Int 99(Pt 1), 91-97, (2017), DOI: S0963-9969(17)30203-X [pii] 10.1016/j.foodres.2017.05.011

Guo, F. and Zhang, T. [Detecting the Nonviable and Heat-Tolerant Bacteria in Activated Sludge by Minimizing DNA from Dead Cells](#). Microb Ecol, (2014), DOI: 10.1007/s00248-014-0389-2

Gurresch, A., et al. [Evidence of metabolically active but non-culturable *Listeria monocytogenes* in long-term growth at 10 degrees C](#). Res Microbiol 167(4), 334-343, (2016), DOI: S0923-2508(16)00008-5

Han, S., et al. [Detection of *Clavibacter michiganensis* subsp. *michiganensis* in viable but nonculturable state from tomato seed using improved qPCR](#). PLoS One 13(5), e0196525, (2018), DOI: 10.1371/journal.pone.0196525

Hand, S., et al. [Biodegradation of 1,4-dioxane: Effects of enzyme inducers and trichloroethylene](#). Sci Total Environ 520, 154-159, (2015), DOI: S0048-9697(15)00297-1

He, X., et al. [In vitro communities derived from oral and gut microbial floras inhibit the growth of bacteria of foreign origins](#). Microb Ecol 60(3), 665-676, (2010), DOI: 10.1007/s00248-010-9711-9

Hellein, K. N., et al. [A filter-based propidium monoazide technique to distinguish live from membrane-compromised microorganisms using quantitative PCR](#). J Microbiol Methods DOI: 10.1016/j.mimet.2012.01.015, (2012), DOI: 10.1016/j.mimet.2012.01.015

Herrero, E. R., et al. [Dysbiosis by neutralizing commensal mediated inhibition of pathobionts](#). Sci Rep 6, 38179, (2016), DOI: srep38179

Janssen, K. J., et al. [Viability-PCR Shows That NAAT Detects a High Proportion of DNA from Non-Viable *Chlamydia trachomatis*](#). PLoS One 11(11), e0165920, (2016), DOI: 10.1371/journal.pone.0165920

Jeusette, I. C., et al. [24-hour evaluation of dental plaque bacteria and halitosis after consumption of a single placebo or dental treat by dogs](#). Am J Vet Res 77(6), 613-619, (2016), DOI: 10.2460/ajvr.77.6.613

Josefson, M. H., et al. [Rapid quantification of viable *Campylobacter* bacteria on chicken carcasses, using real-time PCR and propidium monoazide treatment, as a tool for quantitative risk assessment](#). Appl Environ Microbiol 76(15), 5097-5104, (2010), DOI: 10.1128/AEM.00411-10

Ju, W., et al. [RNA-Based Detection Does not Accurately Enumerate Living *Escherichia coli* O157:H7 Cells on Plants](#). Front Microbiol 7, 223, (2016), DOI: 10.3389/fmicb.2016.00223

Kaushik, R. and Balasubramanian, R. [Discrimination of viable from non-viable Gram-negative bacterial pathogens in airborne particles using propidium monoazide-assisted qPCR](#). Sci Total Environ 449, 237-243, (2013), DOI: 10.1016/j.scitotenv.2013.01.065

Kayigire, X. A., et al. [Propidium monoazide and Xpert MTB/RIF to quantify *Mycobacterium tuberculosis* cells](#). Tuberculosis (Edinb) 101, 79-84, (2016), DOI: S1472-9792(16)30210-4

Khodaei, N., et al. [Digestibility and prebiotic properties of potato rhamnogalacturonan I polysaccharide and its galactose-rich oligosaccharides/oligomers](#). Carbohydr Polym 136, 1074-1084, (2016), DOI: 10.1016/j.carbpol.2015.09.106

Kibbee, R. J. and Ormeci, B. [Development of a sensitive and false-positive free PMA-qPCR viability assay to quantify VBNC *Escherichia coli* and evaluate disinfection performance in wastewater effluent](#). J Microbiol Methods 132, 139-147, (2016), DOI: S0167-7012(16)30347-5

Kim, M., et al. [Evaluation of detachment methods for the enumeration of *Bacteroides fragilis* in sediments via propidium monoazide-quantitative PCR, in comparison to *Enterococcus faecalis* and *Escherichia coli*](#). J Appl Microbiol, (2014), DOI: 10.1111/jam.12630

Kim, M. and Wuertz, S. [Survival and persistence of host-associated *Bacteroidales* cells and DNA in comparison with *Escherichia coli* and *Enterococcus* in freshwater sediments as quantified by PMA-qPCR and qPCR](#). Water Res 87, 182-192, (2015), DOI: S0043-1354(15)30226-8

Kim, S. Y. and Ko, G. [Using propidium monoazide to distinguish between viable and nonviable bacteria, MS2 and murine norovirus](#). Lett Appl Microbiol 55(3), 182-188, (2012), DOI: 10.1111/j.1472-765X.2012.03276.x

Kim, Y. J., et al. [Evaluation of propidium monoazide real-time PCR for early detection of viable Mycobacterium tuberculosis in clinical respiratory specimens](#). Ann Lab Med 34(3), 203-209, (2014), DOI: 10.3343/alm.2014.34.3.203

Kiran, F., et al. [Effect of Encapsulation on Viability of Pediococcus pentosaceus OZF During Its Passage Through the Gastrointestinal Tract Model](#). Curr Microbiol 71(1), 95-105, (2015), DOI: 10.1007/s00284-015-0832-8

Kistler, J. O., et al. [Development and pyrosequencing analysis of an in-vitro oral biofilm model](#). BMC Microbiol 15(1), 24, (2015), DOI: 10.1186/s12866-015-0364-1

Klein, M. I., et al. [Molecular approaches for viable bacterial population and transcriptional analyses in a rodent model of dental caries](#). Mol Oral Microbiol 27(5), 350-361, (2012), DOI: 10.1111/j.2041-1014.2012.00647.x

Kobayashi, H., et al. [Improving clinical significance of PCR: use of propidium monoazide to distinguish viable from dead Staphylococcus aureus and Staphylococcus epidermidis](#). J Orthop Res 27(9), 1243-1247, (2009), DOI: 10.1002/jor.20872

Kobayashi, H., et al. [Distinction between intact and antibiotic-inactivated bacteria by real-time PCR after treatment with propidium monoazide](#). J Orthop Res 28(9), 1245-1251, (2010), DOI: 10.1002/jor.21108

Kralik, P., et al. [Repeated cycles of chemical and physical disinfection and their influence on Mycobacterium avium subsp. paratuberculosis viability measured by propidium monoazide F57 quantitative real time PCR](#). Vet J, (2014), DOI: 10.1016/j.tvjl.2014.05.032

Kralik, P., et al. [Mycobacterium avium subsp. paratuberculosis viability determination using F57 quantitative PCR in combination with propidium monoazide treatment](#). Int J Food Microbiol 141 Suppl 1, S80-86, (2010), DOI: 10.1016/j.ijfoodmicro.2010.03.018

Kramer, M., et al. [Quantification of live and dead probiotic bacteria in lyophilised product by real-time PCR and by flow cytometry](#). Appl Microbiol Biotechnol 84(6), 1137-1147, (2009), DOI: 10.1007/s00253-009-2068-7

Kruger, N. J., et al. ["Limits of control" - crucial parameters for a reliable quantification of viable campylobacter by real-time PCR](#). PLoS One 9(2), e88108, (2014), DOI: 10.1371/journal.pone.0088108

Kuley, R., et al. [Cell-Free Propagation of Coxiella burnetii Does Not Affect Its Relative Virulence](#). PLoS One 10(3), e0121661, (2015), DOI: 10.1371/journal.pone.0121661

Lai, C. H., et al. [Designing primers and evaluation of the efficiency of propidium monoazide - Quantitative polymerase chain reaction for counting the viable cells of Lactobacillus gasseri and Lactobacillus salivarius](#). J Food Drug Anal 25(3), 533-542, (2017), DOI: S1021-9498(16)30153-3 [pii] 10.1016/j.jfda.2016.10.004

Lee, E. S., et al. [Evaluation of propidium monoazide-quantitative PCR to detect viable Mycobacterium fortuitum after chlorine, ozone, and ultraviolet disinfection](#). Int J Food Microbiol 210, 143-148, (2015), DOI: S0168-1605(15)30042-8

Leifels, M., et al. [Capsid integrity quantitative PCR to determine virus infectivity in environmental and food applications - A systematic review](#). Water Res X 11, 100080, (2021), DOI: 10.1016/j.wroa.2020.100080
(water quality, viruses, bacteria, PMA, EMA)

Leifels, M., et al. [From Lab to Lake - Evaluation of Current Molecular Methods for the Detection of Infectious Enteric Viruses in Complex Water Matrices in an Urban Area](#). PLoS One 11(11), e0167105, (2016), DOI: 10.1371/journal.pone.0167105 (EMA, PMA, human adenovirus, enterovirus, and rotavirus A)

Li, B. and Chen, J. Q. [Real-time PCR Methodology for Selective Detection of Viable Escherichia coli O157:H7 by Targeting Z3276 as A Genetic Marker](#). Appl Environ Microbiol DOI: 10.1128/AEM.00794-12, (2012), DOI: 10.1128/AEM.00794-12

Li, B. and Chen, J. Q. [Development of a sensitive and specific qPCR assay in conjunction with propidium monoazide for enhanced detection of live Salmonella spp. in food](#). BMC Microbiol 13, 273, (2013), DOI: 10.1186/1471-2180-13-273

Li, B., et al. [Detection of Live Escherichia coli O157:H7 Cells by PMA-qPCR](#). J Vis Exp (84), (2014), DOI: 10.3791/50967

Li, R., et al. [Comparison of DNA-, PMA-, and RNA-based 16S rRNA Illumina sequencing for detection of live bacteria in water](#). Sci Rep 7(1), 5752, (2017), DOI: 10.1038/s41598-017-02516-3 10.1038/s41598-017-02516-3 [pii]

Li, Y., et al. [The novel loop-mediated isothermal amplification based confirmation methodology on the bacteria in Viable but Non-Culturable \(VBNC\) state](#). Microb Pathog 111, 280-284, (2017), DOI: 10.1016/j.micpath.2017.09.007

Li, Y. F., et al. [Spatial and temporal variations of microbial community in a mixed plug-flow loop reactor fed with dairy manure](#). Microb Biotechnol 7(4), 332-346, (2014), DOI: 10.1111/1751-7915.12125

Liang, N., et al. [Detection of Viable Salmonella in Lettuce by Propidium Monoazide Real-Time PCR](#). J Food Sci 76(4), M234-237, (2011), DOI: 10.1111/j.1750-3841.2011.02123.x

Lin, W. T., et al. [Comparison and characterization of microbial communities in sulfide-rich wastewater with and without propidium monoazide treatment](#). Curr Microbiol 62(2), 374-381, (2011), DOI: 10.1007/s00284-010-9716-0

Liu, H., et al. [Rapid and accurate detection of bacteriophage activity against Escherichia coli O157:H7 by propidium monoazide real-time PCR](#). Biomed Res Int 2014, 319351, (2014), DOI: 10.1155/2014/319351

Liu, J., et al. [Viable but non-culturable state and toxin gene expression of enterohemorrhagic Escherichia coli O157 under cryopreservation](#). Res Microbiol, (2016), DOI: S0923-2508(16)30145-0

Liu, Y. and Mustapha, A. [Detection of viable Escherichia coli O157:H7 in ground beef by propidium monoazide real-time PCR](#). Int J Food Microbiol 170, 48-54, (2014), DOI: 10.1016/j.ijfoodmicro.2013.10.026

Lo, R., et al. [Culture-independent bacterial community profiling of carbon dioxide treated raw milk](#). Int J Food Microbiol 233, 81-89, (2016), DOI: S0168-1605(16)30308-7

Lo, R., et al. [Inhibition of bacterial growth in sweet cheese whey by carbon dioxide as determined by culture-independent community profiling](#). Int J Food Microbiol 217, 20-28, (2016), DOI: 10.1016/j.ijfoodmicro.2015.10.003

Lovdal, T., et al. [Propidium monoazide combined with real-time quantitative PCR underestimates heat-killed Listeria innocua](#). J Microbiol Methods 85(2), 164-169, (2011), DOI: 10.1016/j.mimet.2011.01.027

Lu, C., et al. [Mixing regime as a key factor to determine DON formation in drinking water biological treatment](#). Chemosphere, (2015), DOI: S0045-6535(14)01501-X

Lu, J., et al. [Direct detection from clinical sputum samples to differentiate live and dead Mycobacterium Tuberculosis](#). J Clin Lab Anal 33(3), e22716, (2019), DOI: 10.1002/jcla.22716

Mace, S., et al. [Development of a Rapid Real-Time PCR Method as a Tool To Quantify Viable Photobacterium phosphoreum Bacteria in Salmon \(Salmo salar\) Steaks](#). Appl Environ Microbiol 79(8), 2612-2619, (2013), DOI: 10.1128/AEM.03677-12

Magajna, B. and Schraft, H. [Evaluation of Propidium Monoazide and Quantitative PCR To Quantify Viable Campylobacter jejuni Biofilm and Planktonic Cells in Log Phase and in a Viable but Nonculturable State](#). J Food Prot 78(7), 1303-1311, (2015), DOI: 10.4315/0362-028X.JFP-14-583

Magiopoulos, I., et al. [A multi-parametric assessment of decontamination protocols for the subglacial Lake Ellsworth probe](#). J Microbiol Methods, (2016), DOI: 10.1016/j.mimet.2016.02.012

Mahnert, A., et al. [Cleanroom Maintenance Significantly Reduces Abundance but Not Diversity of Indoor Microbiomes](#). PLoS One 10(8), e0134848, (2015), DOI: 10.1371/journal.pone.0134848

Mayer, T., et al. [Microbial succession in an inflated lunar/Mars analog habitat during a 30-day human occupation](#). Microbiome 4(1), 22, (2016), DOI: 10.1186/s40168-016-0167-0

McQuillan, J. S., et al. [Buzz Off! An Evaluation of Ultrasonic Acoustic Vibration for the Disruption of Marine Microorganisms on Sensor Housing Materials](#). Lett Appl Microbiol, (2016), DOI: 10.1111/lam.12671

McQuillan, J. S., et al. [The anti-bacterial effect of an electrochemical anti-fouling method intended for the protection of miniaturised oceanographic sensors](#). J Microbiol Methods 141, 63-66, (2017), DOI: S0167-7012(17)30214-2 [pii] 10.1016/j.mimet.2017.08.006

Medina, E., et al. [Bacterial Ecology of Fermented Cucumber Rising pH Spoilage as Determined by Nonculture-Based Methods](#). J Food Sci 81(1), M121-129, (2016), DOI: 10.1111/1750-3841.13158

Miotto, P., et al. [Early tuberculosis treatment monitoring by Xpert\(R\) MTB/RIF](#). Eur Respir J 39(5), 1269-1271, (2012), DOI: 10.1183/09031936.00124711

Mohapatra, B. R. and La Duc, M. T. [Evaluation of fluorescence in situ hybridization to detect encapsulated Bacillus pumilus SAFR-032 spores released from poly\(methylmethacrylate\)](#). Microbiol Immunol 56(1), 40-47, (2012), DOI: 10.1111/j.1348-0421.2011.00404.x

Moissl-Eichinger, C., et al. [Quo vadis? Microbial profiling revealed strong effects of cleanroom maintenance and routes of contamination in indoor environments](#). Sci Rep 5, 9156, (2015), DOI: srep09156

Moreno-Mesonero, L., et al. [Detection of viable *Helicobacter pylori* inside free-living amoebae in wastewater and drinking water samples from Eastern Spain](#). Environ Microbiol 19(10), 4103-4112, (2017), DOI: 10.1111/1462-2920.13856

Moyne, A. L., et al. [Assessments of total and viable *Escherichia coli* O157:H7 on field and laboratory grown lettuce](#). PLoS One 8(7), e70643, (2013), DOI: 10.1371/journal.pone.0070643

Muzafar, M., et al. [Survival of the ovine footrot pathogen *Dichelobacter nodosus* in different soils](#). Anaerobe 38, 81-87, (2015), DOI: S1075-9964(15)30098-6

Nam, S., et al. [Selective detection of viable *Helicobacter pylori* using ethidium monoazide or propidium monoazide in combination with real-time polymerase chain reaction](#). Microbiol Immunol 55(12), 841-846, (2011), DOI: 10.1111/j.1348-0421.2011.00388.x

Nguyen, L. D., et al. [Effects of Propidium Monoazide \(PMA\) Treatment on Mycobiome and Bacteriome Analysis of Cystic Fibrosis Airways during Exacerbation](#). PLoS One 11(12), e0168860, (2016), DOI: 10.1371/journal.pone.0168860 PONE-D-16-20893 [pii]

Nkuipou-Kenfack, E., et al. [Improving efficiency of viability-PCR for selective detection of live cells](#). J Microbiol Methods 93(1), 20-24, (2013), DOI: 10.1016/j.mimet.2013.01.018

Nocker, A., et al. [Comparison of propidium monoazide with ethidium monoazide for differentiation of live vs. dead bacteria by selective removal of DNA from dead cells](#). J Microbiol Methods 67(2), 310-320, (2006), DOI: 10.1016/j.mimet.2006.04.015

Nocker, A., et al. [Selective detection of live bacteria combining propidium monoazide sample treatment with microarray technology](#). J Microbiol Methods 76(3), 253-261, (2009), DOI: 10.1016/j.mimet.2008.11.004

Nocker, A., et al. [Discrimination between live and dead cells in bacterial communities from environmental water samples analyzed by 454 pyrosequencing](#). Int Microbiol 13(2), 59-65, (2010),

Nocker, A., et al. [Molecular monitoring of disinfection efficacy using propidium monoazide in combination with quantitative PCR](#). J Microbiol Methods 70(2), 252-260, (2007), DOI: 10.1016/j.mimet.2007.04.014

Nocker, A., et al. [Use of propidium monoazide for live/dead distinction in microbial ecology](#). Appl Environ Microbiol 73(16), 5111-5117, (2007), DOI: 10.1128/AEM.02987-06

Oh, E., et al. [Impact of oxidative stress defense on bacterial survival and morphological change in *Campylobacter jejuni* under aerobic conditions](#). Front Microbiol 6, 295, (2015), DOI: 10.3389/fmicb.2015.00295

Oketic, K., et al. [Evaluation of propidium monoazide real-time PCR for enumeration of probiotic *lactobacilli* microencapsulated in calcium alginate beads](#). Benef Microbes, 1-9, (2015), DOI: C5406PK478061047

Orta de Velasquez, M. T., et al. [Effects of ozone and chlorine disinfection on VBNC *Helicobacter pylori* by molecular techniques and FESEM images](#). Environ Technol, 1-10, (2016), DOI: 10.1080/09593330.2016.1210680

Overney, A., et al. [Development of synthetic media mimicking food soils to study the behaviour of Listeria monocytogenes on stainless steel surfaces](#). Int J Food Microbiol 238, 7-14, (2016), DOI: S0168-1605(16)30436-6

Overney, A., et al. [Impact of environmental factors on the culturability and viability of Listeria monocytogenes under conditions encountered in food processing plants](#). Int J Food Microbiol 244, 74-81, (2017), DOI: S0168-1605(16)30660-2 [pii] 10.1016/j.ijfoodmicro.2016.12.012

Pacholewicz, E., et al. [Propidium monoazide does not fully inhibit the detection of dead Campylobacter on broiler chicken carcasses by qPCR](#). J Microbiol Methods 95(1), 32-38, (2013), DOI: S0167-7012(13)00178-4 [pii] 10.1016/j.mimet.2013.06.003

Pan, Y. and Breidt, F., Jr. [Enumeration of viable Listeria monocytogenes cells by real-time PCR with propidium monoazide and ethidium monoazide in the presence of dead cells](#). Appl Environ Microbiol 73(24), 8028-8031, (2007), DOI: 10.1128/AEM.01198-07

Pang, Y. C., et al. [Shifts of live bacterial community in secondary effluent by chlorine disinfection revealed by Miseq high-throughput sequencing combined with propidium monoazide treatment](#). Appl Microbiol Biotechnol 100(14), 6435-6446, (2016), DOI: 10.1007/s00253-016-7452-5

Papanicolas, L. E., et al. [Bacterial viability in faecal transplants: Which bacteria survive?](#). EBioMedicine 41, 509-516, (2019), DOI: 10.1016/j.ebiom.2019.02.023 (faecal microbiota, PMA)

Pholwat, S., et al. [Rapid first- and second-line drug susceptibility assay for Mycobacterium tuberculosis isolates by use of quantitative PCR](#). J Clin Microbiol 49(1), 69-75, (2011), DOI: 10.1128/JCM.01500-10

Pisz, J. M., et al. [Differentiation of genes extracted from non-viable versus viable micro-organisms in environmental samples using ethidium monoazide bromide](#). J Microbiol Methods 71(3), 312-318, (2007), DOI: 10.1016/j.mimet.2007.09.015

Prevost, B., et al. [Viral persistence in surface and drinking water: Suitability of PCR pre-treatment with intercalating dyes](#). Water Res 91, 68-76, (2016), DOI: 10.1016/j.watres.2015.12.049

Qin, H., et al. [Multiplex real-time PCR coupled with sodium dodecyl sulphate and propidium monoazide for the simultaneous detection of viable Listeria monocytogenes, Cronobacter sakazakii, Staphylococcus aureus and Salmonella spp. in milk](#). International Dairy Journal 108, (2020), DOI: 10.1016/j.idairyj.2020.104739 (Listeria monocytogenes, Cronobacter sakazakii, Staphylococcus aureus and Salmonella spp.)

Rawsthorne, H., et al. [PCR-based method using propidium monoazide to distinguish viable from nonviable *Bacillus subtilis* spores](#). Appl Environ Microbiol 75(9), 2936-2939, (2009), DOI: 10.1128/AEM.02524-08

Rogers, G. B., et al. [Reducing bias in bacterial community analysis of lower respiratory infections](#). ISME J DOI: 10.1038/ismej.2012.145, (2012), DOI: 10.1038/ismej.2012.145

Rogers, G. B., et al. [Assessing the diagnostic importance of nonviable bacterial cells in respiratory infections](#). Diagn Microbiol Infect Dis 62(2), 133-141, (2008), DOI: 10.1016/j.diagmicrobio.2008.06.011

Rogers, G. B., et al. [Ascitic microbiota composition is correlated with clinical severity in cirrhosis with portal hypertension](#). PLoS One 8(9), e74884, (2013), DOI: 10.1371/journal.pone.0074884

Rudi, K., et al. [Use of ethidium monoazide and PCR in combination for quantification of viable and dead cells in complex samples](#). Appl Environ Microbiol 71(2), 1018-1024, (2005), DOI: 10.1128/AEM.71.2.1018-1024.2005

Rueckert, A., et al. [Rapid differentiation and enumeration of the total, viable vegetative cell and spore content of thermophilic bacilli in milk powders with reference to Anoxybacillus flavigermus](#). J Appl Microbiol 99(5), 1246-1255, (2005), DOI: JAM2728 [pii] 10.1111/j.1365-2672.2005.02728.x

Salam, K. W., et al. [A propidium monoazide-quantitative PCR method for the detection and quantification of viable Enterococcus faecalis in large-volume samples of marine waters](#). Appl Microbiol Biotechnol, (2014), DOI: 10.1007/s00253-014-6023-x

Sanchez, M. C., et al. [Quantitative real-time PCR combined with propidium monoazide for the selective quantification of viable periodontal pathogens in an in vitro subgingival biofilm model](#). J Periodontal Res 49(1), 20-28, (2014), DOI: 10.1111/jre.12073

Santiago, P., et al. [Identification of Viable Helicobacter pylori in Drinking Water Supplies by Cultural and Molecular Techniques](#). Helicobacter, (2015), DOI: 10.1111/hel.12205

Scariot, M. C., et al. [Quantification of Lactobacillus paracasei viable cells in probiotic yoghurt by propidium monoazide combined with quantitative PCR](#). Int J Food Microbiol 264, 1-7, (2018), DOI: S0168-1605(17)30452-X [pii] 10.1016/j.ijfoodmicro.2017.10.021

Scaturro, M., et al. [A multicenter study of viable PCR using propidium monoazide to detect Legionella in water samples](#). Diagn Microbiol Infect Dis 85(3), 283-288, (2016), DOI: S0732-8893(16)30085-2

Schnetzinger, F., et al. [Use of propidium monoazide and increased amplicon length reduce false-positive signals in quantitative PCR for bioburden analysis](#). Appl Microbiol Biotechnol 97(5), 2153-2162, (2013), DOI: 10.1007/s00253-013-4711-6

Seliwiorstow, T., et al. [Comparison of sample types and analytical methods for the detection of highly campylobacter-colonized broiler flocks at different stages in the poultry meat production chain](#). Foodborne Pathog Dis 12(5), 399-405, (2015), DOI: 10.1089/fpd.2014.1894

Shah, M. K., et al. [Salmonella enterica in Soils Amended with Heat-Treated Poultry Pellets Survived Longer than Bacteria in Unamended Soils and More Readily Transferred to and Persisted on Spinach](#). Appl Environ Microbiol 85(10), (2019), DOI: 10.1128/AEM.00334-19 (

Shao, Y., et al. [Application of propidium monoazide quantitative real-time PCR to quantify the viability of Lactobacillus delbrueckii ssp. bulgaricus](#). J Dairy Sci 99(12), 9570-9580, (2016), DOI: S0022-0302(16)30723-8

Singh, G., et al. [Determination of viable Salmonellae from potable and source water through PMA assisted qPCR](#). Ecotoxicol Environ Saf DOI: 10.1016/j.ecoenv.2013.02.017, (2013), DOI: 10.1016/j.ecoenv.2013.02.017

Slimani, S., et al. [Evaluation of propidium monoazide \(PMA\) treatment directly on membrane filter for the enumeration of viable but non cultivable Legionella by qPCR](#). J Microbiol Methods 88(2), 319-321, (2012), DOI: 10.1016/j.mimet.2011.12.010

Soejima, T., et al. [Rapid propidium monoazide PCR assay for the exclusive detection of viable Enterobacteriaceae cells in pasteurized milk](#). J Dairy Sci 95(7), 3634-3642, (2012), DOI: 10.3168/jds.2012-5360

Soto-Munoz, L., et al. [Development of PMA real-time PCR method to quantify viable cells of Pantoea agglomerans CPA-2, an antagonist to control the major postharvest diseases on oranges](#). Int J Food Microbiol 180, 49-55, (2014), DOI: 10.1016/j.ijfoodmicro.2014.04.011

Soto-Munoz, L., et al. [DNA-based methodologies for the quantification of live and dead cells in formulated biocontrol products based on Pantoea agglomerans CPA-2](#). Int J Food Microbiol 210, 79-83, (2015), DOI: S0168-1605(15)30037-4

Spangler, B., et al. [Molecular Probes for the Determination of Subcellular Compound Exposure Profiles in Gram-Negative Bacteria](#). ACS Infect Dis 4(9), 1355-1367, (2018), DOI: 10.1021/acsinfecdis.8b00093

Stokell, J. R., et al. [Rapid emergence of a ceftazidime-resistant Burkholderia multivorans strain in a Cystic Fibrosis patient](#). J Cyst Fibros DOI: 10.1016/j.jcf.2013.01.009, (2013), DOI: 10.1016/j.jcf.2013.01.009

Takahashi, Y., et al. [Enumeration of viable Enterococcus faecalis, a predominant apical periodontitis pathogen, using propidium monoazide and quantitative real-time polymerase chain reaction](#). Microbiol Immunol 55(12), 889-892, (2011), DOI: 10.1111/j.1348-0421.2011.00390.x

Tantikachornkiat, M., et al. [The use of propidium monoazide in conjunction with qPCR and Illumina sequencing to identify and quantify live yeasts and bacteria](#). Int J Food Microbiol 234, 53-59, (2016), DOI: 10.1016/j.ijfoodmicro.2016.06.031

Taskin, B., et al. [Selective quantification of viable Escherichia coli bacteria in biosolids by quantitative PCR with propidium monoazide modification](#). Appl Environ Microbiol 77(13), 4329-4335, (2011), DOI: 10.1128/AEM.02895-10

Tavernier, S. and Coenye, T. [Quantification of Pseudomonas aeruginosa in multispecies biofilms using PMA-qPCR](#). PeerJ 3, e787, (2015), DOI: 10.7717/peerj.787

Taylor, M. J., et al. [Limitations of Using Propidium Monoazide with qPCR to Discriminate between Live and Dead Legionella in Biofilm Samples](#). Microbiol Insights 7, 15-24, (2014), DOI: 10.4137/MBI.S17723

Thompson, H., et al. [In vitro culture of previously uncultured oral bacterial phylotypes](#). Appl Environ Microbiol 81(24), 8307-8314, (2015), DOI: AEM.02156-15

Tian, Q., et al. [Selective detection of viable seed-borne Acidovorax citrulli by real-time PCR with propidium monoazide](#). Sci Rep 6, 35457, (2016), DOI: srep35457

Toledo Del Arbol, J., et al. [Changes in microbial diversity of brined green asparagus upon treatment with high hydrostatic pressure](#). Int J Food Microbiol 216, 1-8, (2016), DOI: 10.1016/j.ijfoodmicro.2015.09.001

Toledo Del Arbol, J., et al. [Microbial diversity in pitted sweet cherries \(*Prunus avium* L.\) as affected by High-Hydrostatic Pressure treatment](#). Food Res Int 89(Pt 1), 790-796, (2016), DOI: S0963-9969(16)30435-5 [pii] 10.1016/j.foodres.2016.10.014

Truchado, P., et al. [Correlation between E. coli levels and the presence of foodborne pathogens in surface irrigation water: Establishment of a sampling program](#). Water Res 128, 226-233, (2018), DOI: S0043-1354(17)30864-3 [pii] 10.1016/j.watres.2017.10.041

Tseng, C. C., et al. [Detection of Viable Antibiotic-Resistant/Sensitive *Acinetobacter baumannii* in Indoor Air by Propidium Monoazide Quantitative PCR](#). Indoor Air, (2014), DOI: 10.1111/ina.12165

Udomsil, N., et al. [Quantification of viable bacterial starter cultures of *Virgibacillus sp.* and *Tetragenococcus halophilus* in fish sauce fermentation by real-time quantitative PCR](#). Food Microbiol 57, 54-62, (2016), DOI: S0740-0020(16)00005-8

van Frankenhuyzen, J. K., et al. [Optimization, validation, and application of a real-time PCR protocol for quantification of viable bacterial cells in municipal sewage sludge and biosolids using reporter genes and *Escherichia coli*](#). J Ind Microbiol Biotechnol 40(11), 1251-1261, (2013), DOI: 10.1007/s10295-013-1319-x

van Frankenhuyzen, J. K., et al. [Molecular pathogen detection in biosolids with a focus on quantitative PCR using propidium monoazide for viable cell enumeration](#). J Microbiol Methods 87(3), 263-272, (2011), DOI: 10.1016/j.mimet.2011.09.007

Varma, M., et al. [Quantitative real-time PCR analysis of total and propidium monoazide-resistant fecal indicator bacteria in wastewater](#). Water Res 43(19), 4790-4801, (2009), DOI: 10.1016/j.watres.2009.05.031

Vendrame, M., et al. [Use of propidium monoazide for the enumeration of viable *Oenococcus oeni* in must and wine by quantitative PCR](#). Food Microbiology 35(1), 49-57, (2013), DOI: <http://dx.doi.org/10.1016/j.fm.2013.02.007>

Venkateswaran, K., et al. [International Space Station environmental microbiome - microbial inventories of ISS filter debris](#). Appl Microbiol Biotechnol 98(14), 6453-6466, (2014), DOI: 10.1007/s00253-014-5650-6

Vezzulli, L., et al. [Aquatic ecology of the oyster pathogens *Vibrio splendidus* and *Vibrio aestuarianus*](#). Environ Microbiol, (2014), DOI: 10.1111/1462-2920.12484

Villarreal, M. L., et al. [Advantageous Direct Quantification of Viable Closely Related Probiotics in Petit-Suisse Cheeses under In Vitro Gastrointestinal Conditions by Propidium Monoazide - qPCR](#). PLoS One 8(12), e82102, (2013), DOI: 10.1371/journal.pone.0082102

Wagner, A. O., et al. [Effect of DNA extraction procedure, repeated extraction and ethidium monoazide \(EMA\)/propidium monoazide \(PMA\) treatment on overall DNA yield and impact on microbial fingerprints for bacteria, fungi and archaea in a reference soil](#). Appl Soil Ecol 93, 56-64, (2015), DOI: 10.1016/j.apsoil.2015.04.005

Wahman, D. G., et al. [Determination of the effects of medium composition on the monochloramine disinfection kinetics of *Nitrosomonas europaea* by the propidium monoazide quantitative PCR and Live/Dead BacLight methods](#). Appl Environ Microbiol 76(24), 8277-8280, (2010), DOI: 10.1128/AEM.01631-10

Wahman, D. G., et al. [Monochloramine disinfection kinetics of *Nitrosomonas europaea* by propidium monoazide quantitative PCR and Live/dead BacLight methods](#). Appl Environ Microbiol 75(17), 5555-5562, (2009), DOI: 10.1128/AEM.00407-09

Wan, C., et al. [Development of a propidium monoazide treatment combined with loop-mediated isothermal amplification \(PMA-LAMP\) assay for rapid detection of viable *Listeria monocytogenes*](#). International Journal of Food Science & Technology 47(11), 2460-2467, (2012), DOI: 10.1111/j.1365-2621.2012.03123.x

Wang, L., et al. [Development of an IMS-PMA-PCR assay with internal amplification control for rapid and sensitive detection of viable Escherichia coli O157:H7 in milk](#). International Dairy Journal DOI: 10.1016/j.idairyj.2013.07.006, (2013), DOI: 10.1016/j.idairyj.2013.07.006

Weinmaier, T., et al. [A viability-linked metagenomic analysis of cleanroom environments: eukarya, prokaryotes, and viruses](#). Microbiome 3, 62, (2015), DOI: 10.1186/s40168-015-0129-y

Wicaksono, W. A., et al. [The Bacterial Signature of Leptospermum scoparium \(Manuka\) Reveals Core and Accessory Communities with Bioactive Properties](#). PLoS One 11(9), e0163717, (2016), DOI: 10.1371/journal.pone.0163717

Wu, B., et al. [Enumeration of viable non-culturable Vibrio cholerae using propidium monoazide combined with quantitative PCR](#). J Microbiol Methods 115, 147-152, (2015), DOI: S0167-7012(15)00155-4

Xia, X., et al. [OxyR-activated expression of Dps is important for Vibrio cholerae oxidative stress resistance and pathogenesis](#). PLoS One 12(2), e0171201, (2017), DOI: 10.1371/journal.pone.0171201

Xiao, L., et al. [Development of a quantitative real-time PCR assay for viable Salmonella spp. without enrichment](#). Food Control 57, 185-189, (2015), DOI: 10.1016/j.foodcont.2015.03.050 (Salmonella spp, PMA, Taqman, Shrimp)

Xiao, X. L., et al. [Detection of viable but nonculturable Escherichia coli O157:H7 using propidium monoazide treatments and qPCR](#). Can J Microbiol 59(3), 157-163, (2013), DOI: 10.1139/cjm-2012-0577

Xie, G., et al. [Simultaneous detection of Salmonella spp., Pseudomonas aeruginosa, Bacillus cereus, and Escherichia coli O157:H7 in environmental water using PMA combined with mPCR](#). J Microbiol 58(8), 668-674, (2020), DOI: 10.1007/s12275-020-0084-6 (multiplex PCR, Gel assay, PMA, Salmonella spp., Pseudomonas aeruginosa, Bacillus cereus, and Escherichia coli O157:H7)

Yan, M., et al. [PMA-LAMP for rapid detection of Escherichia coli and shiga toxins from viable but non-culturable state](#). Microb Pathog 105, 245-250, (2017), DOI: S0882-4010(16)30933-0 [pii]

Yanez, M. A., et al. [Quantification of viable Legionella pneumophila cells using propidium monoazide combined with quantitative PCR](#). J Microbiol Methods 85(2), 124-130, (2011), DOI: 10.1016/j.mimet.2011.02.004

Yang, L., et al. [Enhanced antimicrobial activity of silver nanoparticles-Lonicera Japonica Thunb combo](#). IET Nanobiotechnol 10(1), 28-32, (2016), DOI: 10.1049/iet-nbt.2015.0027

Yang, L., et al. [Mechanism of enhanced antibacterial activity of ultra-fine ZnO in phosphate buffer solution with various organic acids](#). Environ Pollut 218, 863-869, (2016), DOI: S0269-7491(16)30710-2

Yang, X., Badoni, M, Wang, H, Gill, CO. [Effects of mild and pasteurizing heat treatments on survival of generic and verotoxigenic Escherichia coli from beef enrichment cultures](#). Food Control DOI: 10.1016/j.foodcont.2013.11.004, (2013), DOI: 10.1016/j.foodcont.2013.11.004

Yang, X., et al. [Use of propidium monoazide and quantitative PCR for differentiation of viable Escherichia coli from E. coli killed by mild or pasteurizing heat treatments](#). Food Microbiol 28(8), 1478-1482, (2011), DOI: 10.1016/j.fm.2011.08.013

Yang, Y., et al. [Effects of monochloramine and hydrogen peroxide on the bacterial community shifts in biologically treated wastewater](#). Chemosphere 189, 399-406, (2017), DOI: S0045-6535(17)31500-X [pii]

Yang, Y., et al. [Magnetic nano-beads based separation combined with propidium monoazide treatment and multiplex PCR assay for simultaneous detection of viable *Salmonella Typhimurium*, *Escherichia coli O157:H7* and *Listeria monocytogenes* in food products](#). Food Microbiol 34(2), 418-424, (2013), DOI: 10.1016/j.fm.2013.01.004

Yergeau, E., et al. [The functional potential of high Arctic permafrost revealed by metagenomic sequencing, qPCR and microarray analyses](#). ISME J 4(9), 1206-1214, (2010), DOI: 10.1038/ismej.2010.41

Youn, S. Y., et al. [Application of loop-mediated isothermal amplification with propidium monoazide treatment to detect live *Salmonella* in chicken carcasses](#). Poult Sci, (2016), DOI: pew341

Young, G. R., et al. [Reducing Viability Bias in Analysis of Gut Microbiota in Preterm Infants at Risk of NEC and Sepsis](#). Front Cell Infect Microbiol 7, 237, (2017), DOI: 10.3389/fcimb.2017.00237

Yu, S., et al. [Multiplex PCR coupled with propidium monoazide for the detection of viable *Cronobacter sakazakii*, *Bacillus cereus*, and *Salmonella* spp. in milk and milk products](#). J Dairy Sci 100(10), 7874-7882, (2017), DOI: S0022-0302(17)30709-9

Zhang, Z., et al. [Detection of Non-emetic and Emetic *Bacillus cereus* by Propidium Monoazide Multiplex PCR \(PMA-mPCR\) with Internal Amplification Control](#). Food Control DOI: 10.1016/j.foodcont.2013.07.035, (2013), DOI: 10.1016/j.foodcont.2013.07.035

Zhang, Z., et al. [Detection of viable enterotoxin-producing *Bacillus cereus* and analysis of toxigenicity from ready-to-eat foods and infant formula milk powder by multiplex PCR](#). J Dairy Sci 99(2), 1047-1055, (2016), DOI: S0022-0302(15)00896-6

Zhang, Z., et al. [Quantifying viable *Vibrio parahaemolyticus* and *Listeria monocytogenes* simultaneously in raw shrimp](#). Appl Microbiol Biotechnol 99(15), 6451-6462, (2015), DOI: 10.1007/s00253-015-6715-x

Zhang, Z., et al. [Propidium monoazide combined with real-time PCR for selective detection of viable *Staphylococcus aureus* in milk powder and meat products](#). J Dairy Sci, (2015), DOI: S0022-0302(15)00010-7

Zhao, X., et al. [Rapid Detection of Viable *Escherichia coli* O157 by Coupling Propidium Monoazide with Loop-Mediated Isothermal Amplification](#). J Microbiol Biotechnol 23(12), 1708-1716, (2013), DOI: 10.4014/jmb.1306.06003

Zheng, Q., et al. [Growth of healthy and sanitizer-injured *Salmonella* cells on mung bean sprouts in different commercial enrichment broths](#). Food Microbiol 52, 159-168, (2015), DOI: S0740-0020(15)00146-X

Zhong, H., et al. [Virulence of thermolabile haemolysin tlh, gastroenteritis related pathogenicity tdh and trh of the pathogens *Vibrio Parahemolyticus* in Viable but Non-Culturable \(VBNC\) state](#). Microb Pathog 111, 352-356, (2017), DOI: 10.1016/j.micpath.2017.09.021

Zhou, B., et al. [A new application of a sodium deoxycholate-propidium monoazide-quantitative PCR assay for rapid and sensitive detection of viable *Cronobacter sakazakii* in powdered infant formula](#). J Dairy Sci 99(12), 9550-9559, (2016), DOI: S0022-0302(16)30721-4

Zhu, D., et al. [Identification of surface-associated proteins of *Bifidobacterium animalis* ssp. *lactis* KLDS 2.0603 by enzymatic shaving](#). J Dairy Sci 99(7), 5155-5172, (2016), DOI: S0022-0302(16)30201-6

Zhu, R.-G., et al. [Quantitative study of viable *Vibrio parahaemolyticus* cells in raw seafood using propidium monoazide in combination with quantitative PCR](#). Journal of Microbiological Methods DOI: 10.1016/j.mimet.2012.05.019(0), (2012), DOI: 10.1016/j.mimet.2012.05.019

Yeast and Fungi

Agusti, G., et al. [Viable quantitative PCR for assessing the response of *Candida albicans* to antifungal treatment](#). Appl Microbiol Biotechnol 97(1), 341-349, (2013), DOI: 10.1007/s00253-012-4524-z

Andorra, I., et al. [Determination of viable wine yeast using DNA binding dyes and quantitative PCR](#). Int J Food Microbiol 144(2), 257-262, (2010), DOI: 10.1016/j.ijfoodmicro.2010.10.003

Blachowicz, A., et al. [Human presence impacts fungal diversity of inflated lunar/Mars analog habitat](#). Microbiome 5(1), 62, (2017), DOI: 10.1186/s40168-017-0280-8 10.1186/s40168-017-0280-8 [pii]

Checinska, A., et al. [Microbiomes of the dust particles collected from the International Space Station and Spacecraft Assembly Facilities](#). Microbiome 3, 50, (2015), DOI: 10.1186/s40168-015-0116-3

Crespo-Sempere, A., et al. [Propidium monoazide combined with real-time quantitative PCR to quantify viable *Alternaria spp.* contamination in tomato products](#). Int J Food Microbiol 165(3), 214-220, (2013), DOI: 10.1016/j.ijfoodmicro.2013.05.017

Luo, Y., et al. [Peptoid Efficacy against Polymicrobial Biofilms Determined by Using Propidium Monoazide-Modified Quantitative PCR](#). Chembiochem, (2016), DOI: 10.1002/cbic.201600381

Medina, E., et al. [Bacterial Ecology of Fermented Cucumber Rising pH Spoilage as Determined by Nonculture-Based Methods](#). J Food Sci 81(1), M121-129, (2016), DOI: 10.1111/1750-3841.13158

Navarro, Y., et al. [Viability-PCR Allows Monitoring Yeast Population Dynamics in Mixed Fermentations Including Viable but Non-Culturable Yeasts](#). Foods 9(10), (2020), DOI: 10.3390/foods9101373 (PMAxx, VBNC, Yeast)

Nguyen, L. D., et al. [Effects of Propidium Monoazide \(PMA\) Treatment on Mycobioome and Bacteriome Analysis of Cystic Fibrosis Airways during Exacerbation](#). PLoS One 11(12), e0168860, (2016), DOI: 10.1371/journal.pone.0168860 PONE-D-16-20893 [pii]

Onofri, S., et al. [Survival of Antarctic Cryptoendolithic Fungi in Simulated Martian Conditions On Board the International Space Station](#). Astrobiology 15(12), 1052-1059, (2015), DOI: 10.1089/ast.2015.1324

Pacelli, C., et al. [BIOMEX Experiment: Ultrastructural Alterations, Molecular Damage and Survival of the Fungus *Cryomyces antarcticus* after the Experiment Verification Tests](#). Orig Life Evol Biosph, (2016), DOI: 10.1007/s11084-016-9485-2

Tantikachornkiat, M., et al. [The use of propidium monoazide in conjunction with qPCR and Illumina sequencing to identify and quantify live yeasts and bacteria](#). Int J Food Microbiol 234, 53-59, (2016), DOI: 10.1016/j.ijfoodmicro.2016.06.031

Toledo Del Arbol, J., et al. [Microbial diversity in pitted sweet cherries \(*Prunus avium* L.\) as affected by High-Hydrostatic Pressure treatment](#). Food Res Int 89(Pt 1), 790-796, (2016), DOI: S0963-9969(16)30435-5 [pii] 10.1016/j.foodres.2016.10.014

Vendrame, M., et al. [Use of propidium monoazide for the enumeration of viable *Brettanomyces bruxellensis* in wine and beer by quantitative PCR](#). Food Microbiol 42, 196-204, (2014), DOI: 10.1016/j.fm.2014.03.010

Venkateswaran, K., et al. [International Space Station environmental microbiome - microbial inventories of ISS filter debris](#). Appl Microbiol Biotechnol 98(14), 6453-6466, (2014), DOI: 10.1007/s00253-014-5650-6

Vesper, S., et al. [Quantifying fungal viability in air and water samples using quantitative PCR after treatment with propidium monoazide \(PMA\)](#). J Microbiol Methods 72(2), 180-184, (2008), DOI: 10.1016/j.mimet.2007.11.017

Wagner, A. O., et al. [Effect of DNA extraction procedure, repeated extraction and ethidium monoazide \(EMA\)/propidium monoazide \(PMA\) treatment on overall DNA yield and impact on microbial fingerprints for bacteria, fungi and archaea in a reference soil](#). Appl Soil Ecol 93, 56-64, (2015), DOI: 10.1016/j.apsoil.2015.04.005

Weinmaier, T., et al. [A viability-linked metagenomic analysis of cleanroom environments: eukarya, prokaryotes, and viruses](#). Microbiome 3, 62, (2015), DOI: 10.1186/s40168-015-0129-y

Zhu, X., et al. [Effect of a Multistarter Yeast Inoculum on Ethanol Reduction and Population Dynamics in Wine Fermentation](#). Foods 10(3), (2021), DOI: 10.3390/foods10030623 (PMAxx, Yeast in wine must)

Biofilms

Abdullah, N., et al. [The antibacterial efficacy of silver diamine fluoride \(SDF\) is not modulated by potassium iodide \(KI\) supplements: A study on in-situ plaque biofilms using viability real-time PCR with propidium monoazide](#). PLoS One 15(11), e0241519, (2020), DOI: 10.1371/journal.pone.0241519 (PMAxx, Glo-Plate)

Alvarez, G., et al. [Method to quantify live and dead cells in multi-species oral biofilm by real-time PCR with propidium monoazide](#). AMB Express 3(1), 1, (2013), DOI: 10.1186/2191-0855-3-1

de Almeida, J., et al. [Effectiveness of EDTA and Modified Salt Solution to Detach and Kill Cells from *Enterococcus faecalis* Biofilm](#). J Endod 42(2), 320-323, (2016), DOI: S0099-2399(15)01080-8

Fernandez Ramirez, M. D., et al. [Quantitative assessment of viable cells of *Lactobacillus plantarum* strains in single, dual and multi-strain biofilms](#). Int J Food Microbiol 244, 43-51, (2017), DOI: S0168-1605(16)30662-6 [pii] 10.1016/j.ijfoodmicro.2016.12.014

Fernandez, Y. M. M., et al. [Effect of mouthwashes on the composition and metabolic activity of oral biofilms grown in vitro](#). Clin Oral Investig, (2016), DOI: 10.1007/s00784-016-1876-2

Fernandez, Y. M. M., et al. [A reproducible microcosm biofilm model of subgingival microbial communities](#). J Periodontal Res 52(6), 1021-1031, (2017), DOI: 10.1111/jre.12473

Forbes, S., et al. [Formulation of Biocides Increases Antimicrobial Potency and Mitigates the Enrichment of Nonsusceptible Bacteria in Multispecies Biofilms](#). Appl Environ Microbiol 83(7), (2017), DOI: AEM.03054-16 [pii] 10.1128/AEM.03054-16

Gomez-Alvarez, V., et al. [Biofilm community dynamics in bench-scale annular reactors simulating arrestment of chloraminated drinking water nitrification](#). Environ Sci Technol 48(10), 5448-5457, (2014), DOI: 10.1021/es5005208

Herrero, E. R., et al. [Dysbiosis by neutralizing commensal mediated inhibition of pathobionts](#). Sci Rep 6, 38179, (2016), DOI: srep38179

Kistler, J. O., et al. [Development and pyrosequencing analysis of an in-vitro oral biofilm model](#). BMC Microbiol 15(1), 24, (2015), DOI: 10.1186/s12866-015-0364-1

Klein, M. I., et al. [Molecular approaches for viable bacterial population and transcriptional analyses in a rodent model of dental caries](#). Mol Oral Microbiol 27(5), 350-361, (2012), DOI: 10.1111/j.2041-1014.2012.00647.x

Luo, Y., et al. [Peptoid Efficacy against Polymicrobial Biofilms Determined by Using Propidium Monoazide-Modified Quantitative PCR](#). Chembiochem, (2016), DOI: 10.1002/cbic.201600381

Magajna, B. and Schraft, H. [Evaluation of Propidium Monoazide and Quantitative PCR To Quantify Viable Campylobacter jejuni Biofilm and Planktonic Cells in Log Phase and in a Viable but Nonculturable State](#). J Food Prot 78(7), 1303-1311, (2015), DOI: 10.4315/0362-028X.JFP-14-583

Moussa, D. G. and Aparicio, C. [Targeting the oral plaque microbiome with immobilized anti-biofilm peptides at tooth-restoration interfaces](#). PLoS One 15(7), e0235283, (2020), DOI: 10.1371/journal.pone.0235283 (PMA, PMA-Lite, dental plaque, biofilm)

Overney, A., et al. [Impact of environmental factors on the culturability and viability of Listeria monocytogenes under conditions encountered in food processing plants](#). Int J Food Microbiol 244, 74-81, (2017), DOI: S0168-1605(16)30660-2 [pii] 10.1016/j.ijfoodmicro.2016.12.012

Pan, Y. and Breidt, F., Jr. [Enumeration of viable Listeria monocytogenes cells by real-time PCR with propidium monoazide and ethidium monoazide in the presence of dead cells](#). Appl Environ Microbiol 73(24), 8028-8031, (2007), DOI: 10.1128/AEM.01198-07

Pisz, J. M., et al. [Differentiation of genes extracted from non-viable versus viable micro-organisms in environmental samples using ethidium monoazide bromide](#). J Microbiol Methods 71(3), 312-318, (2007), DOI: 10.1016/j.mimet.2007.09.015

Sanchez, M. C., et al. [Quantitative real-time PCR combined with propidium monoazide for the selective quantification of viable periodontal pathogens in an in vitro subgingival biofilm model](#). J Periodontal Res 49(1), 20-28, (2014), DOI: 10.1111/jre.12073

Tavernier, S. and Coenye, T. [Quantification of Pseudomonas aeruginosa in multispecies biofilms using PMA-qPCR](#). PeerJ 3, e787, (2015), DOI: 10.7717/peerj.787

Taylor, M. J., et al. [Limitations of Using Propidium Monoazide with qPCR to Discriminate between Live and Dead Legionella in Biofilm Samples](#). Microbiol Insights 7, 15-24, (2014), DOI: 10.4137/MBI.S17723

Vezzulli, L., et al. [Aquatic ecology of the oyster pathogens Vibrio splendidus and Vibrio aestuarianus](#). Environ Microbiol, (2014), DOI: 10.1111/1462-2920.12484

Eukaryotes

Agullo-Barcelo, M., et al. [Quantification of relative proportions of intact cells in microbiological samples using the example of Cryptosporidium parvum oocysts](#). Lett Appl Microbiol 58(1), 70-78, (2014), DOI: 10.1111/lam.12157

Alonso, J. L., et al. [Quantification of viable Giardia cysts and Cryptosporidium oocysts in wastewater using propidium monoazide quantitative real-time PCR](#). Parasitol Res 113(7), 2671-2678, (2014), DOI: 10.1007/s00436-014-3922-9

Auld, R. R., et al. [Seasonal variation in an acid mine drainage microbial community](#). Can J Microbiol 63(2), 137-152, (2017), DOI: 10.1139/cjm-2016-0215

Brescia, C. C., et al. [Cryptosporidium propidium monoazide-PCR, a molecular biology-based technique for genotyping of viable Cryptosporidium oocysts](#). Appl Environ Microbiol 75(21), 6856-6863, (2009), DOI: 10.1128/AEM.00540-09

Burnet, J. B., et al. [How does the cladoceran Daphnia pulex affect the fate of Escherichia coli in water?](#). PLoS One 12(2), e0171705, (2017), DOI: 10.1371/journal.pone.0171705

Fittipaldi, M., et al. [Discrimination of viable Acanthamoeba castellani trophozoites and cysts by propidium monoazide real-time polymerase chain reaction](#). J Eukaryot Microbiol 58(4), 359-364, (2011), DOI: 10.1111/j.1550-7408.2011.00557.x

Habtewold, T., et al. [Detection of viable plasmodium ookinetes in the midguts of anopheles coluzzi using PMA-qrtPCR](#). Parasit Vectors 8, 455, (2015), DOI: 10.1186/s13071-015-1087-8 10.1186/s13071-015-1087-8 [pii]

Moreno-Mesonero, L., et al. [Detection of viable Helicobacter pylori inside free-living amoebae in wastewater and drinking water samples from Eastern Spain](#). Environ Microbiol 19(10), 4103-4112, (2017), DOI: 10.1111/1462-2920.13856

Rousseau, A., et al. [Evaluation of propidium monoazide-based qPCR to detect viable oocysts of Toxoplasma gondii](#). Parasitol Res 118(3), 999-1010, (2019), DOI: 10.1007/s00436-019-06220-1 10.1007/s00436-019-06220-1 [pii]

Viruses

Bae, S. and Wuertz, S. [Survival of host-associated bacteroidales cells and their relationship with Enterococcus spp., Campylobacter jejuni, Salmonella enterica serovar Typhimurium, and adenovirus in freshwater microcosms as measured by propidium monoazide-quantitative PCR](#). Appl Environ Microbiol 78(4), 922-932, (2012), DOI: 10.1128/AEM.05157-11

Bellehumeur, C., et al. [Propidium monoazide \(PMA\) and ethidium bromide monoazide \(EMA\) improve DNA array and high-throughput sequencing of porcine reproductive and respiratory syndrome virus identification](#). J Virol Methods 222, 182-191, (2015), DOI: S0166-0934(15)00230-X

Bellehumeur, C., et al. [Herpesviruses Including Novel Gammaherpesviruses Are Widespread among Phocid Seal Species in Canada](#). J Wildl Dis 52(1), 70-81, (2016), DOI: 10.7589/2015-01-020

Boles, C., et al. [The Optimization of Methods for the Collection of Aerosolized Murine Norovirus](#). Food Environ Virol 12(3), 199-208, (2020), DOI: 10.1007/s12560-020-09430-4 (Murine Norovirus, aerosol samples)

Chamings, A., et al. [An Emerging Human Parechovirus Type 5 Causing Sepsis-Like Illness in Infants in Australia](#). Viruses 11(10), (2019), DOI: 10.3390/v11100913 (PMAXx)

Corbeil, S., et al. [Innate resistance of New Zealand paua to abalone viral ganglioneuritis](#). J Invertebr Pathol 146, 31-35, (2017), DOI: S0022-2011(17)30081-2 [pii] 10.1016/j.jip.2017.04.005

Coudray-Meunier, C., et al. [Discrimination of infectious hepatitis A virus and rotavirus by combining dyes and surfactants with RT-qPCR](#). BMC Microbiol 13, 216, (2013), DOI: 10.1186/1471-2180-13-216

Elizaquivel, P., et al. [Recent developments in the use of viability dyes and quantitative PCR in the food microbiology field](#). J Appl Microbiol 116(1), 1-13, (2013), DOI: 10.1111/jam.12365

Elsasser, D., et al. [Heterogeneous asymmetric recombinase polymerase amplification \(haRPA\) for rapid hygiene control of large-volume water samples](#). Anal Biochem 546, 58-64, (2018), DOI: S0003-2697(18)30071-X [pii] 10.1016/j.ab.2018.01.032

Escudero-Abarca, B. I., et al. [Molecular methods used to estimate thermal inactivation of a prototype human norovirus: more heat resistant than previously believed?](#). Food Microbiol 41, 91-95, (2014), DOI: 10.1016/j.fm.2014.01.009

Fittipaldi, M., et al. [Discrimination of infectious bacteriophage T4 virus by propidium monoazide real-time PCR](#). J Virol Methods 168(1-2), 228-232, (2010), DOI: 10.1016/j.jviromet.2010.06.011

Fraisse, A., et al. [Discrimination of infectious and heat-treated norovirus by combining platinum compounds and real-time RT-PCR](#). Int J Food Microbiol 269, 64-74, (2018), DOI: 10.1016/j.ijfoodmicro.2018.01.015

Garson, J. A., et al. [Evaluation of an ethidium monoazide-enhanced 16S rDNA real-time polymerase chain reaction assay for bacterial screening of platelet concentrates and comparison with automated culture](#). Transfusion 54(3 Pt 2), 870-878, (2014), DOI: 10.1111/trf.12256

Graiver, D. A., et al. [Ethidium monoazide does not inhibit RT-PCR amplification of nonviable avian influenza RNA](#). J Virol Methods 164(1-2), 51-54, (2010), DOI: 10.1016/j.jviromet.2009.11.024

Greening, G. [Foodborne viruses: a focus on challenges associated with detection methods](#). Microbiology Australia DOI: 10.1071/MA13022, (2013), DOI: 10.1071/MA13022

Karim, M. R., et al. [Propidium monoazide reverse transcriptase PCR and RT-qPCR for detecting infectious enterovirus and norovirus](#). J Virol Methods 219, 51-61, (2015), DOI: S0166-0934(15)00042-7

Kim, K., et al. [Development of a real-time RT-PCR assay combined with ethidium monoazide treatment for RNA viruses and its application to detect viral RNA after heat exposure](#). Water Sci Technol 63(3), 502-507, (2011), DOI: 10.2166/wst.2011.249

Kim, S.-H., et al. [A combined treatment of UV-assisted TiO₂ photocatalysis and high hydrostatic pressure to inactivate internalized murine norovirus](#). Innovative Food Science & Emerging Technologies 39, 188-196, (2017), DOI: 10.1016/j.ifset.2016.11.015 (human norovirus, PMA, food testing)

Kim, S. Y. and Ko, G. [Using propidium monoazide to distinguish between viable and nonviable bacteria, MS2 and murine norovirus](#). Lett Appl Microbiol 55(3), 182-188, (2012), DOI: 10.1111/j.1472-765X.2012.03276.x

Lee, M., et al. [Detection of viable murine norovirus using the plaque assay and propidium-monoazide-combined real-time reverse transcription-polymerase chain reaction](#). J Virol Methods, (2015), DOI: S0166-0934(15)00162-7

Leifels, M., et al. [Capsid integrity quantitative PCR to determine virus infectivity in environmental and food applications - A systematic review](#). Water Res X 11, 100080, (2021), DOI: 10.1016/j.wroa.2020.100080
(water quality, viruses, bacteria, PMA, EMA)

Leifels, M., et al. [From Lab to Lake - Evaluation of Current Molecular Methods for the Detection of Infectious Enteric Viruses in Complex Water Matrices in an Urban Area](#). PLoS One 11(11), e0167105, (2016), DOI: 10.1371/journal.pone.0167105 (EMA, PMA, human adenovirus, enterovirus, and rotavirus A)

Leifels, M., et al. [Use of ethidium monoazide and propidium monoazide to determine viral infectivity upon inactivation by heat, UV- exposure and chlorine](#). Int J Hyg Environ Health, (2015), DOI: S1438-4639(15)00020-6

Lopez-Galvez, F., et al. [Irrigating Lettuce with Wastewater Effluent: Does Disinfection with Chlorine Dioxide Inactivate Viruses?](#). J Environ Qual 47(5), 1139-1145, (2018), DOI: 10.2134/jeq2017.12.0485
(PMAxx, enteric viruses, wastewater irrigation, food testing)

Luo, Y., et al. [Peptoid Efficacy against Polymicrobial Biofilms Determined by Using Propidium Monoazide-Modified Quantitative PCR](#). Chembiochem, (2016), DOI: 10.1002/cbic.201600381

McLellan, N. L., et al. [Evaluation of propidium monoazide and long-amplicon qPCR as an infectivity assay for coliphage](#). J Virol Methods 238, 48-55, (2016), DOI: S0166-0934(16)30086-6

Moreno, L., et al. [Application of viability PCR to discriminate the infectivity of hepatitis A virus in food samples](#). Int J Food Microbiol 201, 1-6, (2015), DOI: S0168-1605(15)00082-3

Oristo, S., et al. [Performance of pre-RT-qPCR treatments to discriminate infectious human rotaviruses and noroviruses from heat-inactivated viruses: applications of PMA/PMAxx, benzonase and RNase](#). J Appl Microbiol 124(4), 1008-1016, (2018), DOI: 10.1111/jam.13737 (norovirus, Rotavirus, RT-PCR)

Park, D., et al. [Inactivation efficiency and mechanism of UV-TiO₂ photocatalysis against murine norovirus using a solidified agar matrix](#). Int J Food Microbiol 238, 256-264, (2016), DOI: S0168-1605(16)30503-7

Parshionikar, S., et al. [Use of propidium monoazide in reverse transcriptase PCR to distinguish between infectious and noninfectious enteric viruses in water samples](#). Appl Environ Microbiol 76(13), 4318-4326, (2010), DOI: 10.1128/AEM.02800-09

Prevost, B., et al. [Viral persistence in surface and drinking water: Suitability of PCR pre-treatment with intercalating dyes](#). Water Res 91, 68-76, (2016), DOI: 10.1016/j.watres.2015.12.049

Quijada, N. M., et al. [Propidium Monoazide Integrated with qPCR Enables the Detection and Enumeration of Infectious Enteric RNA and DNA Viruses in Clam and Fermented Sausages](#). Front Microbiol 7, 2008, (2016), DOI: 10.3389/fmicb.2016.02008

Randazzo, W., et al. [Optimization of PMAxx pretreatment to distinguish between human norovirus with intact and altered capsids in shellfish and sewage samples](#). Int J Food Microbiol 266, 1-7, (2018), DOI: S0168-1605(17)30505-6 [pii] 10.1016/j.ijfoodmicro.2017.11.011

Randazzo, W., et al. [Evaluation of viability PCR performance for assessing norovirus infectivity in fresh-cut vegetables and irrigation water](#). Int J Food Microbiol 229, 1-6, (2016), DOI: 10.1016/j.ijfoodmicro.2016.04.010

Randazzo, W., et al. [Interlaboratory Comparative Study to Detect Potentially Infectious Human Enteric Viruses in Influent and Effluent Waters](#). Food Environ Virol, (2019), DOI: 10.1007/s12560-019-09392-2

Randazzo, W., et al. [Improving efficiency of viability-qPCR for selective detection of infectious HAV in food and water samples](#). J Appl Microbiol 124(4), 958-964, (2018), DOI: 10.1111/jam.13519

Randazzo, W., et al. [Viability RT-qPCR to Distinguish Between HEV and HAV With Intact and Altered Capsids](#). Front Microbiol 9, 1973, (2018), DOI: 10.3389/fmicb.2018.01973

Razafimahefa, R. M., et al. [Optimisation of a PMAxx-RT-qPCR Assay and the Preceding Extraction Method to Selectively Detect Infectious Murine Norovirus Particles in Mussels](#). Food Environ Virol 13(1), 93-106, (2021), DOI: 10.1007/s12560-020-09454-w (PMAxx, Murine Norovirus, mussels)

Sanchez, G., et al. [Discrimination of infectious hepatitis A viruses by propidium monoazide real-time RT-PCR](#). Food Environ Virol 4(1), 21-25, (2012), DOI: 10.1007/s12560-011-9074-5

Shah, M. K., et al. [Salmonella enterica in Soils Amended with Heat-Treated Poultry Pellets Survived Longer than Bacteria in Unamended Soils and More Readily Transferred to and Persisted on Spinach](#). Appl Environ Microbiol 85(10), (2019), DOI: 10.1128/AEM.00334-19 (

Takahashi, H., et al. [Heat-Denatured Lysozyme Inactivates Murine Norovirus as a Surrogate Human Norovirus](#). Sci Rep 5, 11819, (2015), DOI: srep11819

Weinmaier, T., et al. [A viability-linked metagenomic analysis of cleanroom environments: eukarya, prokaryotes, and viruses](#). Microbiome 3, 62, (2015), DOI: 10.1186/s40168-015-0129-y

Xiao, L., et al. [Development of a quantitative real-time PCR assay for viable Salmonella spp. without enrichment](#). Food Control 57, 185-189, (2015), DOI: 10.1016/j.foodcont.2015.03.050 (Salmonella spp, PMA, Taqman, Shrimp)

Archaea

Auld, R. R., et al. [Seasonal variation in an acid mine drainage microbial community](#). Can J Microbiol 63(2), 137-152, (2017), DOI: 10.1139/cjm-2016-0215

Di Maiuta, N., et al. [Assessment of bacteria and archaea in metalworking fluids using massive parallel 16S rRNA gene tag sequencing](#). Lett Appl Microbiol 65(4), 266-273, (2017), DOI: 10.1111/lam.12782

Gagen, E. J., et al. [Novel cultivation-based approach to understanding the miscellaneous crenarchaeotic group \(MCG\) archaea from sedimentary ecosystems](#). Appl Environ Microbiol 79(20), 6400-6406, (2013), DOI: 10.1128/AEM.02153-13

Heise, J., et al. [Propidium monoazide treatment to distinguish between live and dead methanogens in pure cultures and environmental samples](#). J Microbiol Methods 121, 11-23, (2016), DOI: 10.1016/j.mimet.2015.12.002

Schirmack, J., et al. [Influence of Martian regolith analogs on the activity and growth of methanogenic archaea, with special regard to long-term desiccation](#). Front Microbiol 6, 210, (2015), DOI: 10.3389/fmicb.2015.00210

Wagner, A. O., et al. [Effect of DNA extraction procedure, repeated extraction and ethidium monoazide \(EMA\)/propidium monoazide \(PMA\) treatment on overall DNA yield and impact on microbial fingerprints](#)

[for bacteria, fungi and archaea in a reference soil](#). Appl Soil Ecol 93, 56-64, (2015), DOI: 10.1016/j.apsoil.2015.04.005

Weinmaier, T., et al. [A viability-linked metagenomic analysis of cleanroom environments: eukarya, prokaryotes, and viruses](#). Microbiome 3, 62, (2015), DOI: 10.1186/s40168-015-0129-y

Yergeau, E., et al. [The functional potential of high Arctic permafrost revealed by metagenomic sequencing, qPCR and microarray analyses](#). ISME J 4(9), 1206-1214, (2010), DOI: 10.1038/ismej.2010.41

PMA References by Application

Clinical Samples

Gobert, G., et al. [Droplet digital PCR improves absolute quantification of viable lactic acid bacteria in faecal samples](#). J Microbiol Methods 148, 64-73, (2018), DOI: S0167-7012(18)30056-3 [pii] 10.1016/j.mimet.2018.03.004

Lu, J., et al. [Direct detection from clinical sputum samples to differentiate live and dead Mycobacterium Tuberculosis](#). J Clin Lab Anal 33(3), e22716, (2019), DOI: 10.1002/jcla.22716

Pannala, R., et al. 1177 [Quantitative Qpcr-Based Bioburden Test for the Detection of Carbapenem-Resistant Enterobacteriaceae \(Cre\): Novel Test for Surveillance and Risk-Stratification](#). Paper presented at: Gastrointestinal Endoscopy, (2020), DOI: 10.1016/j.gie.2020.03.892 (Enterobacteriaceae, PMA)

Papanicolas, L. E., et al. [Bacterial viability in faecal transplants: Which bacteria survive?](#). EBioMedicine 41, 509-516, (2019), DOI: 10.1016/j.ebiom.2019.02.023 (faecal microbiota, PMA)

Rogers, G. B., et al. [Ascitic microbiota composition is correlated with clinical severity in cirrhosis with portal hypertension](#). PLoS One 8(9), e74884, (2013), DOI: 10.1371/journal.pone.0074884

Young, G. R., et al. [Reducing Viability Bias in Analysis of Gut Microbiota in Preterm Infants at Risk of NEC and Sepsis](#). Front Cell Infect Microbiol 7, 237, (2017), DOI: 10.3389/fcimb.2017.00237

Food Science

Atia, A., et al. [Study and Understanding Behavior of Alginate-Inulin Synbiotics Beads for Protection and Delivery of Antimicrobial-Producing Probiotics in Colonic Simulated Conditions](#). Probiotics Antimicrob Proteins, (2017), DOI: 10.1007/s12602-017-9355-x 10.1007/s12602-017-9355-x [pii]

Brauge, T., et al. [Viability Detection of Foodborne Bacterial Pathogens in Food Environment by PMA-qPCR and by Microscopic Observation](#). Methods Mol Biol 1918, 117-128, (2019), DOI: 10.1007/978-1-4939-9000-9_9

Caldwell, J. M., et al. [Pectinatus sottacetonis sp. nov. isolated from commercial pickle spoilage tank](#). Int J Syst Evol Microbiol DOI: 10.1099/ijns.0.047886-0, (2013), DOI: 10.1099/ijns.0.047886-0

Cattani, F., et al. [Detection and quantification of viable *Bacillus cereus* group species in milk by propidium monoazide quantitative real-time PCR](#). J Dairy Sci, (2016), DOI: 10.3168/jds.2015-10019

Cattani, F., et al. [The detection of viable vegetative cells of *Bacillus sporothermodurans* using propidium monoazide with semi-nested PCR](#). Food Microbiol 34(1), 196-201, (2013), DOI: 10.1016/j.fm.2012.12.007

Crespo-Sempere, A., et al. [Propidium monoazide combined with real-time quantitative PCR to quantify viable *Alternaria* spp. contamination in tomato products](#). Int J Food Microbiol 165(3), 214-220, (2013), DOI: 10.1016/j.ijfoodmicro.2013.05.017

Del Serrone, P., et al. [Neem \(*Azadirachtaindica* A. Juss\) Oil: A Natural Preservative to Control Meat Spoilage](#). Foods 4(1), 3-14, (2015), DOI: foods4010003 [pii] 10.3390/foods4010003

Desfosses-Foucault, E., et al. [Assessment of Probiotic Viability during Cheddar Cheese Manufacture and Ripening Using Propidium Monoazide-PCR Quantification](#). Front Microbiol 3, 350, (2012), DOI: 10.3389/fmicb.2012.00350

Duarte, A., et al. [Effect of exposure to stress conditions on propidium monoazide \(PMA\)-qPCR based *Campylobacter* enumeration in broiler carcass rinses](#). Food Microbiol 48, 182-190, (2015), DOI: S0740-0020(14)00324-4

Elizaquivel, P., et al. [Recent developments in the use of viability dyes and quantitative PCR in the food microbiology field](#). J Appl Microbiol 116(1), 1-13, (2013), DOI: 10.1111/jam.12365

Elizaquivel, P., et al. [Application of propidium monoazide-qPCR to evaluate the ultrasonic inactivation of *Escherichia coli* O157:H7 in fresh-cut vegetable wash water](#). Food Microbiol 30(1), 316-320, (2012), DOI: 10.1016/j.fm.2011.10.008

Erkus, O., et al. [Use of propidium monoazide for selective profiling of viable microbial cells during Gouda cheese ripening](#). Int J Food Microbiol 228, 1-9, (2016), DOI: S0168-1605(16)30142-8

Fei, Z., et al. [A novel bioluminescent approach to the loop-mediated isothermal amplification-based detection of *Lactobacillus salivarius* in feed samples](#). J Microbiol Methods, 106209, (2021), DOI: 10.1016/j.mimet.2021.106209 (Lactobacillus, Feed samples)

Feng, K., et al. [A Dual Filtration-Based Multiplex PCR Method for Simultaneous Detection of Viable *Escherichia coli* O157:H7, *Listeria monocytogenes*, and *Staphylococcus aureus* on Fresh-Cut Cantaloupe](#). PLoS One 11(12), e0166874, (2016), DOI: 10.1371/journal.pone.0166874

Forghani, F., et al. [Enterotoxigenic profiling of emetic toxin- and enterotoxin-producing *Bacillus cereus*, Isolated from food, environmental, and clinical samples by multiplex PCR](#). J Food Sci 79(11), M2288-2293, (2014), DOI: 10.1111/1750-3841.12666

Ganesan, B., et al. [Probiotic bacteria survive in Cheddar cheese and modify populations of other lactic acid bacteria](#). J Appl Microbiol 116(6), 1642-1656, (2014), DOI: 10.1111/jam.12482

Grande Burgos, M. J., et al. [Analysis of the microbiota of refrigerated chopped parsley after treatments with a coating containing enterocin AS-48 or by high-hydrostatic pressure](#). Food Res Int 99(Pt 1), 91-97, (2017), DOI: S0963-9969(17)30203-X [pii] 10.1016/j.foodres.2017.05.011

Greening, G. [Foodborne viruses: a focus on challenges associated with detection methods](#). Microbiology Australia DOI: 10.1071/MA13022, (2013), DOI: 10.1071/MA13022

Han, S., et al. [Detection of *Clavibacter michiganensis* subsp. *michiganensis* in viable but nonculturable state from tomato seed using improved qPCR](#). PLoS One 13(5), e0196525, (2018), DOI: 10.1371/journal.pone.0196525

Josefsen, M. H., et al. [Rapid quantification of viable Campylobacter bacteria on chicken carcasses, using real-time PCR and propidium monoazide treatment, as a tool for quantitative risk assessment](#). Appl Environ Microbiol 76(15), 5097-5104, (2010), DOI: 10.1128/AEM.00411-10

Ju, W., et al. [RNA-Based Detection Does not Accurately Enumerate Living Escherichia coli O157:H7 Cells on Plants](#). Front Microbiol 7, 223, (2016), DOI: 10.3389/fmicb.2016.00223

Kim, S.-H., et al. [A combined treatment of UV-assisted TiO₂ photocatalysis and high hydrostatic pressure to inactivate internalized murine norovirus](#). Innovative Food Science & Emerging Technologies 39, 188-196, (2017), DOI: 10.1016/j.ifset.2016.11.015 (human norovirus, PMA, food testing)

Li, B. and Chen, J. Q. [Development of a sensitive and specific qPCR assay in conjunction with propidium monoazide for enhanced detection of live Salmonella spp. in food](#). BMC Microbiol 13, 273, (2013), DOI: 10.1186/1471-2180-13-273

Liang, N., et al. [Detection of Viable Salmonella in Lettuce by Propidium Monoazide Real-Time PCR](#). J Food Sci 76(4), M234-237, (2011), DOI: 10.1111/j.1750-3841.2011.02123.x

Liu, Y. and Mustapha, A. [Detection of viable Escherichia coli O157:H7 in ground beef by propidium monoazide real-time PCR](#). Int J Food Microbiol 170, 48-54, (2014), DOI: 10.1016/j.ijfoodmicro.2013.10.026

Lo, R., et al. [Culture-independent bacterial community profiling of carbon dioxide treated raw milk](#). Int J Food Microbiol 233, 81-89, (2016), DOI: S0168-1605(16)30308-7

Lo, R., et al. [Inhibition of bacterial growth in sweet cheese whey by carbon dioxide as determined by culture-independent community profiling](#). Int J Food Microbiol 217, 20-28, (2016), DOI: 10.1016/j.ijfoodmicro.2015.10.003

Lopez-Galvez, F., et al. [Irrigating Lettuce with Wastewater Effluent: Does Disinfection with Chlorine Dioxide Inactivate Viruses?](#). J Environ Qual 47(5), 1139-1145, (2018), DOI: 10.2134/jeq2017.12.0485 (PMAxx, enteric viruses, wastewater irrigation, food testing)

Mace, S., et al. [Development of a Rapid Real-Time PCR Method as a Tool To Quantify Viable Photobacterium phosphoreum Bacteria in Salmon \(Salmo salar\) Steaks](#). Appl Environ Microbiol 79(8), 2612-2619, (2013), DOI: 10.1128/AEM.03677-12

Medina, E., et al. [Bacterial Ecology of Fermented Cucumber Rising pH Spoilage as Determined by Nonculture-Based Methods](#). J Food Sci 81(1), M121-129, (2016), DOI: 10.1111/1750-3841.13158

Moyné, A. L., et al. [Assessments of total and viable Escherichia coli O157:H7 on field and laboratory grown lettuce](#). PLoS One 8(7), e70643, (2013), DOI: 10.1371/journal.pone.0070643

Overney, A., et al. [Development of synthetic media mimicking food soils to study the behaviour of Listeria monocytogenes on stainless steel surfaces](#). Int J Food Microbiol 238, 7-14, (2016), DOI: S0168-1605(16)30436-6

Overney, A., et al. [Impact of environmental factors on the culturability and viability of Listeria monocytogenes under conditions encountered in food processing plants](#). Int J Food Microbiol 244, 74-81, (2017), DOI: S0168-1605(16)30660-2 [pii] 10.1016/j.ijfoodmicro.2016.12.012

Pacholewicz, E., et al. [Propidium monoazide does not fully inhibit the detection of dead *Campylobacter* on broiler chicken carcasses by qPCR](#). J Microbiol Methods 95(1), 32-38, (2013), DOI: S0167-7012(13)00178-4 [pii] 10.1016/j.mimet.2013.06.003

Qin, H., et al. [Multiplex real-time PCR coupled with sodium dodecyl sulphate and propidium monoazide for the simultaneous detection of viable *Listeria monocytogenes*, *Cronobacter sakazakii*, *Staphylococcus aureus* and *Salmonella* spp. in milk](#). International Dairy Journal 108, (2020), DOI: 10.1016/j.idairyj.2020.104739 (*Listeria monocytogenes*, *Cronobacter sakazakii*, *Staphylococcus aureus* and *Salmonella* spp)

Quijada, N. M., et al. [Propidium Monoazide Integrated with qPCR Enables the Detection and Enumeration of Infectious Enteric RNA and DNA Viruses in Clam and Fermented Sausages](#). Front Microbiol 7, 2008, (2016), DOI: 10.3389/fmicb.2016.02008

Randazzo, W., et al. [Evaluation of viability PCR performance for assessing norovirus infectivity in fresh-cut vegetables and irrigation water](#). Int J Food Microbiol 229, 1-6, (2016), DOI: 10.1016/j.ijfoodmicro.2016.04.010

Randazzo, W., et al. [Improving efficiency of viability-qPCR for selective detection of infectious HAV in food and water samples](#). J Appl Microbiol 124(4), 958-964, (2018), DOI: 10.1111/jam.13519

Razafimahefa, R. M., et al. [Optimisation of a PMAXx-RT-qPCR Assay and the Preceding Extraction Method to Selectively Detect Infectious Murine Norovirus Particles in Mussels](#). Food Environ Virol 13(1), 93-106, (2021), DOI: 10.1007/s12560-020-09454-w (PMAXx, Murine Norovirus, mussels)

Rueckert, A., et al. [Rapid differentiation and enumeration of the total, viable vegetative cell and spore content of thermophilic bacilli in milk powders with reference to *Anoxybacillus flavigermans*](#). J Appl Microbiol 99(5), 1246-1255, (2005), DOI: JAM2728 [pii] 10.1111/j.1365-2672.2005.02728.x

Scariot, M. C., et al. [Quantification of *Lactobacillus paracasei* viable cells in probiotic yoghurt by propidium monoazide combined with quantitative PCR](#). Int J Food Microbiol 264, 1-7, (2018), DOI: S0168-1605(17)30452-X [pii] 10.1016/j.ijfoodmicro.2017.10.021

Seliwiorstow, T., et al. [Comparison of sample types and analytical methods for the detection of highly campylobacter-colonized broiler flocks at different stages in the poultry meat production chain](#). Foodborne Pathog Dis 12(5), 399-405, (2015), DOI: 10.1089/fpd.2014.1894

Shah, M. K., et al. [Salmonella enterica in Soils Amended with Heat-Treated Poultry Pellets Survived Longer than Bacteria in Unamended Soils and More Readily Transferred to and Persisted on Spinach](#). Appl Environ Microbiol 85(10), (2019), DOI: 10.1128/AEM.00334-19 (

Soejima, T., et al. [Rapid propidium monoazide PCR assay for the exclusive detection of viable Enterobacteriaceae cells in pasteurized milk](#). J Dairy Sci 95(7), 3634-3642, (2012), DOI: 10.3168/jds.2012-5360

Tian, Q., et al. [Selective detection of viable seed-borne Acidovorax citrulli by real-time PCR with propidium monoazide](#). Sci Rep 6, 35457, (2016), DOI: srep35457

Toledo Del Arbol, J., et al. [Changes in microbial diversity of brined green asparagus upon treatment with high hydrostatic pressure](#). Int J Food Microbiol 216, 1-8, (2016), DOI: 10.1016/j.ijfoodmicro.2015.09.001

Toledo Del Arbol, J., et al. [Microbial diversity in pitted sweet cherries \(*Prunus avium* L.\) as affected by High-Hydrostatic Pressure treatment](#). Food Res Int 89(Pt 1), 790-796, (2016), DOI: S0963-9969(16)30435-5 [pii] 10.1016/j.foodres.2016.10.014

Udomsil, N., et al. [Quantification of viable bacterial starter cultures of *Virgibacillus* sp. and *Tetragenococcus halophilus* in fish sauce fermentation by real-time quantitative PCR](#). Food Microbiol 57, 54-62, (2016), DOI: S0740-0020(16)00005-8

Vendrame, M., et al. [Use of propidium monoazide for the enumeration of viable *Oenococcus oeni* in must and wine by quantitative PCR](#). Food Microbiology 35(1), 49-57, (2013), DOI: <http://dx.doi.org/10.1016/j.fm.2013.02.007>

Villarreal, M. L., et al. [Advantageous Direct Quantification of Viable Closely Related Probiotics in Petit-Suisse Cheeses under In Vitro Gastrointestinal Conditions by Propidium Monoazide - qPCR](#). PLoS One 8(12), e82102, (2013), DOI: 10.1371/journal.pone.0082102

Wang, L., et al. [Development of an IMS-PMA-PCR assay with internal amplification control for rapid and sensitive detection of viable *Escherichia coli* O157:H7 in milk](#). International Dairy Journal DOI: 10.1016/j.idairyj.2013.07.006, (2013), DOI: 10.1016/j.idairyj.2013.07.006

Xiao, L., et al. [Development of a quantitative real-time PCR assay for viable *Salmonella* spp. without enrichment](#). Food Control 57, 185-189, (2015), DOI: 10.1016/j.foodcont.2015.03.050 (*Salmonella* spp, PMA, Taqman, Shrimp)

Yang, Y., et al. [Magnetic nano-beads based separation combined with propidium monoazide treatment and multiplex PCR assay for simultaneous detection of viable *Salmonella Typhimurium*, *Escherichia coli* O157:H7 and *Listeria monocytogenes* in food products](#). Food Microbiol 34(2), 418-424, (2013), DOI: 10.1016/j.fm.2013.01.004

Youn, S. Y., et al. [Application of loop-mediated isothermal amplification with propidium monoazide treatment to detect live *Salmonella* in chicken carcasses](#). Poult Sci, (2016), DOI: pew341

Yu, S., et al. [Multiplex PCR coupled with propidium monoazide for the detection of viable *Cronobacter sakazakii*, *Bacillus cereus*, and *Salmonella* spp. in milk and milk products](#). J Dairy Sci 100(10), 7874-7882, (2017), DOI: S0022-0302(17)30709-9 [pii] 10.3168/jds.2017-13110

Zeng, D., et al. [A polymerase chain reaction based lateral flow test strip with propidium monoazide for detection of viable *Vibrio parahaemolyticus* in codfish](#). Microchemical Journal 159, (2020), DOI: 10.1016/j.microc.2020.105418 (*Vibrio parahaemolyticus*, PMA)

Zhang, Z., et al. [Detection of viable enterotoxin-producing *Bacillus cereus* and analysis of toxigenicity from ready-to-eat foods and infant formula milk powder by multiplex PCR](#). J Dairy Sci 99(2), 1047-1055, (2016), DOI: S0022-0302(15)00896-6

Zhang, Z., et al. [Quantifying viable *Vibrio parahaemolyticus* and *Listeria monocytogenes* simultaneously in raw shrimp](#). Appl Microbiol Biotechnol 99(15), 6451-6462, (2015), DOI: 10.1007/s00253-015-6715-x

Zhang, Z., et al. [Propidium monoazide combined with real-time PCR for selective detection of viable *Staphylococcus aureus* in milk powder and meat products](#). J Dairy Sci, (2015), DOI: S0022-0302(15)00010-7

Zhou, B., et al. [A new application of a sodium deoxycholate-propidium monoazide-quantitative PCR assay for rapid and sensitive detection of viable Cronobacter sakazakii in powdered infant formula](#). J Dairy Sci 99(12), 9550-9559, (2016), DOI: S0022-0302(16)30721-4

Zhu, R.-G., et al. [Quantitative study of viable Vibrio parahaemolyticus cells in raw seafood using propidium monoazide in combination with quantitative PCR](#). Journal of Microbiological Methods DOI: 10.1016/j.mimet.2012.05.019(0), (2012), DOI: 10.1016/j.mimet.2012.05.019

Zhu, X., et al. [Effect of a Multistarter Yeast Inoculum on Ethanol Reduction and Population Dynamics in Wine Fermentation](#). Foods 10(3), (2021), DOI: 10.3390/foods10030623 (PMAxx, Yeast in wine must)

Probiotics

Atia, A., et al. [Study and Understanding Behavior of Alginate-Inulin Synbiotics Beads for Protection and Delivery of Antimicrobial-Producing Probiotics in Colonic Simulated Conditions](#). Probiotics Antimicrob Proteins, (2017), DOI: 10.1007/s12602-017-9355-x 10.1007/s12602-017-9355-x [pii]

Desfosses-Foucault, E., et al. [Assessment of Probiotic Viability during Cheddar Cheese Manufacture and Ripening Using Propidium Monoazide-PCR Quantification](#). Front Microbiol 3, 350, (2012), DOI: 10.3389/fmicb.2012.00350

Ganesan, B., et al. [Probiotic bacteria survive in Cheddar cheese and modify populations of other lactic acid bacteria](#). J Appl Microbiol 116(6), 1642-1656, (2014), DOI: 10.1111/jam.12482

Khodaei, N., et al. [Digestibility and prebiotic properties of potato rhamnogalacturonan I polysaccharide and its galactose-rich oligosaccharides/oligomers](#). Carbohydr Polym 136, 1074-1084, (2016), DOI: 10.1016/j.carbpol.2015.09.106

Kiran, F., et al. [Effect of Encapsulation on Viability of Pediococcus pentosaceus OZF During Its Passage Through the Gastrointestinal Tract Model](#). Curr Microbiol 71(1), 95-105, (2015), DOI: 10.1007/s00284-015-0832-8

Kramer, M., et al. [Quantification of live and dead probiotic bacteria in lyophilised product by real-time PCR and by flow cytometry](#). Appl Microbiol Biotechnol 84(6), 1137-1147, (2009), DOI: 10.1007/s00253-009-2068-7

Lai, C. H., et al. [Designing primers and evaluation of the efficiency of propidium monoazide - Quantitative polymerase chain reaction for counting the viable cells of Lactobacillus gasseri and Lactobacillus salivarius](#). J Food Drug Anal 25(3), 533-542, (2017), DOI: S1021-9498(16)30153-3 [pii] 10.1016/j.jfda.2016.10.004

Oketic, K., et al. [Evaluation of propidium monoazide real-time PCR for enumeration of probiotic lactobacilli microencapsulated in calcium alginate beads](#). Benef Microbes, 1-9, (2015), DOI: C5406PK478061047

Scariot, M. C., et al. [Quantification of Lactobacillus paracasei viable cells in probiotic yoghurt by propidium monoazide combined with quantitative PCR](#). Int J Food Microbiol 264, 1-7, (2018), DOI: S0168-1605(17)30452-X [pii] 10.1016/j.ijfoodmicro.2017.10.021

Villarreal, M. L., et al. [Advantageous Direct Quantification of Viable Closely Related Probiotics in Petit-Suisse Cheeses under In Vitro Gastrointestinal Conditions by Propidium Monoazide - qPCR](#). PLoS One 8(12), e82102, (2013), DOI: 10.1371/journal.pone.0082102

Environmental Testing

Alonso, J. L., et al. [Quantification of viable Giardia cysts and Cryptosporidium oocysts in wastewater using propidium monoazide quantitative real-time PCR](#). Parasitol Res 113(7), 2671-2678, (2014), DOI: 10.1007/s00436-014-3922-9

Bae, S. and Wuertz, S. [Rapid decay of host-specific fecal Bacteroidales cells in seawater as measured by quantitative PCR with propidium monoazide](#). Water Res 43(19), 4850-4859, (2009), DOI: 10.1016/j.watres.2009.06.053

Bae, S. and Wuertz, S. [Survival of host-associated bacteroidales cells and their relationship with Enterococcus spp., Campylobacter jejuni, Salmonella enterica serovar Typhimurium, and adenovirus in freshwater microcosms as measured by propidium monoazide-quantitative PCR](#). Appl Environ Microbiol 78(4), 922-932, (2012), DOI: 10.1128/AEM.05157-11

Bae, S. and Wuertz, S. [Decay of host-associated Bacteroidales cells and DNA in continuous-flow freshwater and seawater microcosms of identical experimental design and temperature as measured by PMA-qPCR and qPCR](#). Water Res 70C, 205-213, (2014), DOI: S0043-1354(14)00730-1 [pii] 10.1016/j.watres.2014.10.032

Checinska Sielaff, A., et al. [Characterization of the total and viable bacterial and fungal communities associated with the International Space Station surfaces](#). Microbiome 7(1), 50, (2019), DOI: 10.1186/s40168-019-0666-x

Chiao, T. H., et al. [Differential resistance of drinking water bacterial populations to monochloramine disinfection](#). Environ Sci Technol 48(7), 4038-4047, (2014), DOI: 10.1021/es4055725

Desneux, J., et al. [Fate of Viable but Non-culturable Listeria monocytogenes in Pig Manure Microcosms](#). Front Microbiol 7, 245, (2016), DOI: 10.3389/fmicb.2016.00245

Desneux, J., et al. [Experimental design for the optimization of propidium monoazide treatment to quantify viable and non-viable bacteria in piggery effluents](#). BMC Microbiol 15, 164, (2015), DOI: 10.1186/s12866-015-0505-6

Ditommaso, S., et al. [Overestimation of the Legionella spp. load in environmental samples by quantitative real-time PCR: pretreatment with propidium monoazide as a tool for the assessment of an association between Legionella concentration and sanitary risk](#). Diagn Microbiol Infect Dis 80(4), 260-266, (2014), DOI: S0732-8893(14)00372-1 [pii] 10.1016/j.diagmicrobio.2014.09.010

Ditommaso, S., et al. [Legionella in water samples: How can you interpret the results obtained by quantitative PCR?](#). Mol Cell Probes, (2014), DOI: S0890-8508(14)00045-0 [pii] 10.1016/j.mcp.2014.09.002

Dong, S., et al. [Persistence of Bacteroides ovatus under simulated sunlight irradiation](#). BMC Microbiol 14, 178, (2014), DOI: 10.1186/1471-2180-14-178

Eichmiller, J. J., et al. [Decay of genetic markers for fecal bacterial indicators and pathogens in sand from Lake Superior](#). Water Res 59, 99-111, (2014), DOI: 10.1016/j.watres.2014.04.005

Elsasser, D., et al. [Heterogeneous asymmetric recombinase polymerase amplification \(haRPA\) for rapid hygiene control of large-volume water samples](#). Anal Biochem 546, 58-64, (2018), DOI: S0003-2697(18)30071-X [pii] 10.1016/j.ab.2018.01.032

Fittipaldi, M., et al. [Viable real-time PCR in environmental samples: can all data be interpreted directly?](#). *Microb Ecol* 61(1), 7-12, (2010), DOI: 10.1007/s00248-010-9719-1

Forghani, F., et al. [Enterotoxigenic profiling of emetic toxin- and enterotoxin-producing *Bacillus cereus*, Isolated from food, environmental, and clinical samples by multiplex PCR](#). *J Food Sci* 79(11), M2288-2293, (2014), DOI: 10.1111/1750-3841.12666

Fujimoto, M., et al. [Application of ion torrent sequencing to the assessment of the effect of alkali ballast water treatment on microbial community diversity](#). *PLoS One* 9(9), e107534, (2014), DOI: 10.1371/journal.pone.0107534

Gensberger, E. T., et al. [Evaluation of quantitative PCR combined with PMA treatment for molecular assessment of microbial water quality](#). *Water Res* 67, 367-376, (2014), DOI: 10.1016/j.watres.2014.09.022

Heise, J., et al. [Propidium monoazide treatment to distinguish between live and dead methanogens in pure cultures and environmental samples](#). *J Microbiol Methods* 121, 11-23, (2016), DOI: 10.1016/j.mimet.2015.12.002

Kibbee, R. J. and Ormeci, B. [Development of a sensitive and false-positive free PMA-qPCR viability assay to quantify VBNC *Escherichia coli* and evaluate disinfection performance in wastewater effluent](#). *J Microbiol Methods* 132, 139-147, (2016), DOI: S0167-7012(16)30347-5

Kim, M. and Wuertz, S. [Survival and persistence of host-associated Bacteroidales cells and DNA in comparison with *Escherichia coli* and *Enterococcus* in freshwater sediments as quantified by PMA-qPCR and qPCR](#). *Water Res* 87, 182-192, (2015), DOI: S0043-1354(15)30226-8

Leifels, M., et al. [Capsid integrity quantitative PCR to determine virus infectivity in environmental and food applications - A systematic review](#). *Water Res X* 11, 100080, (2021), DOI: 10.1016/j.wroa.2020.100080 (water quality, viruses, bacteria, PMA, EMA)

Leifels, M., et al. [From Lab to Lake - Evaluation of Current Molecular Methods for the Detection of Infectious Enteric Viruses in Complex Water Matrices in an Urban Area](#). *PLoS One* 11(11), e0167105, (2016), DOI: 10.1371/journal.pone.0167105 (EMA, PMA, human adenovirus, enterovirus, and rotavirus A)

Li, R., et al. [Comparison of DNA-, PMA-, and RNA-based 16S rRNA Illumina sequencing for detection of live bacteria in water](#). *Sci Rep* 7(1), 5752, (2017), DOI: 10.1038/s41598-017-02516-3 10.1038/s41598-017-02516-3 [pii]

Lopez-Galvez, F., et al. [Irrigating Lettuce with Wastewater Effluent: Does Disinfection with Chlorine Dioxide Inactivate Viruses?](#). *J Environ Qual* 47(5), 1139-1145, (2018), DOI: 10.2134/jeq2017.12.0485 (PMAXx, enteric viruses, wastewater irrigation, food testing)

Lu, C., et al. [Mixing regime as a key factor to determine DON formation in drinking water biological treatment](#). *Chemosphere*, (2015), DOI: S0045-6535(14)01501-X

Magiopoulos, I., et al. [A multi-parametric assessment of decontamination protocols for the subglacial Lake Ellsworth probe](#). *J Microbiol Methods*, (2016), DOI: 10.1016/j.mimet.2016.02.012

Mayer, T., et al. [Microbial succession in an inflated lunar/Mars analog habitat during a 30-day human occupation](#). *Microbiome* 4(1), 22, (2016), DOI: 10.1186/s40168-016-0167-0

Moreno-Mesonero, L., et al. [Detection of viable *Helicobacter pylori* inside free-living amoebae in wastewater and drinking water samples from Eastern Spain](#). Environ Microbiol 19(10), 4103-4112, (2017), DOI: 10.1111/1462-2920.13856

Pang, Y. C., et al. [Shifts of live bacterial community in secondary effluent by chlorine disinfection revealed by Miseq high-throughput sequencing combined with propidium monoazide treatment](#). Appl Microbiol Biotechnol 100(14), 6435-6446, (2016), DOI: 10.1007/s00253-016-7452-5

Parshionikar, S., et al. [Use of propidium monoazide in reverse transcriptase PCR to distinguish between infectious and noninfectious enteric viruses in water samples](#). Appl Environ Microbiol 76(13), 4318-4326, (2010), DOI: 10.1128/AEM.02800-09

Prevost, B., et al. [Viral persistence in surface and drinking water: Suitability of PCR pre-treatment with intercalating dyes](#). Water Res 91, 68-76, (2016), DOI: 10.1016/j.watres.2015.12.049

Salam, K. W., et al. [A propidium monoazide-quantitative PCR method for the detection and quantification of viable *Enterococcus faecalis* in large-volume samples of marine waters](#). Appl Microbiol Biotechnol, (2014), DOI: 10.1007/s00253-014-6023-x

Santiago, P., et al. [Identification of Viable *Helicobacter pylori* in Drinking Water Supplies by Cultural and Molecular Techniques](#). Helicobacter, (2015), DOI: 10.1111/hel.12205

Scaturro, M., et al. [A multicenter study of viable PCR using propidium monoazide to detect *Legionella* in water samples](#). Diagn Microbiol Infect Dis 85(3), 283-288, (2016), DOI: S0732-8893(16)30085-2

Shah, M. K., et al. [Salmonella enterica in Soils Amended with Heat-Treated Poultry Pellets Survived Longer than Bacteria in Unamended Soils and More Readily Transferred to and Persisted on Spinach](#). Appl Environ Microbiol 85(10), (2019), DOI: 10.1128/AEM.00334-19 (

Singh, G., et al. [Determination of viable *Salmonellae* from potable and source water through PMA assisted qPCR](#). Ecotoxicol Environ Saf DOI: 10.1016/j.ecoenv.2013.02.017, (2013), DOI: 10.1016/j.ecoenv.2013.02.017

Soto-Munoz, L., et al. [Development of PMA real-time PCR method to quantify viable cells of *Pantoea agglomerans* CPA-2, an antagonist to control the major postharvest diseases on oranges](#). Int J Food Microbiol 180, 49-55, (2014), DOI: 10.1016/j.ijfoodmicro.2014.04.011

Tian, Q., et al. [Selective detection of viable seed-borne *Acidovorax citrulli* by real-time PCR with propidium monoazide](#). Sci Rep 6, 35457, (2016), DOI: srep35457

Truchado, P., et al. [Correlation between *E. coli* levels and the presence of foodborne pathogens in surface irrigation water: Establishment of a sampling program](#). Water Res 128, 226-233, (2018), DOI: S0043-1354(17)30864-3 [pii] 10.1016/j.watres.2017.10.041

van Frankenhuyzen, J. K., et al. [Optimization, validation, and application of a real-time PCR protocol for quantification of viable bacterial cells in municipal sewage sludge and biosolids using reporter genes and *Escherichia coli*](#). J Ind Microbiol Biotechnol 40(11), 1251-1261, (2013), DOI: 10.1007/s10295-013-1319-x

Varma, M., et al. [Quantitative real-time PCR analysis of total and propidium monoazide-resistant fecal indicator bacteria in wastewater](#). Water Res 43(19), 4790-4801, (2009), DOI: 10.1016/j.watres.2009.05.031

Wicaksono, W. A., et al. [The Bacterial Signature of Leptospermum scoparium \(Manuka\) Reveals Core and Accessory Communities with Bioactive Properties](#). PLoS One 11(9), e0163717, (2016), DOI: 10.1371/journal.pone.0163717 PONE-D-16-20711 [pii]

Yang, Y., et al. [Effects of monochloramine and hydrogen peroxide on the bacterial community shifts in biologically treated wastewater](#). Chemosphere 189, 399-406, (2017), DOI: S0045-6535(17)31500-X [pii] 10.1016/j.chemosphere.2017.09.087

Filtered Samples

Chiao, T. H., et al. [Differential resistance of drinking water bacterial populations to monochloramine disinfection](#). Environ Sci Technol 48(7), 4038-4047, (2014), DOI: 10.1021/es4055725

Hellein, K. N., et al. [A filter-based propidium monoazide technique to distinguish live from membrane-compromised microorganisms using quantitative PCR](#). J Microbiol Methods DOI: 10.1016/j.mimet.2012.01.015, (2012), DOI: 10.1016/j.mimet.2012.01.015

Salam, K. W., et al. [A propidium monoazide-quantitative PCR method for the detection and quantification of viable Enterococcus faecalis in large-volume samples of marine waters](#). Appl Microbiol Biotechnol, (2014), DOI: 10.1007/s00253-014-6023-x

Slimani, S., et al. [Evaluation of propidium monoazide \(PMA\) treatment directly on membrane filter for the enumeration of viable but non cultivable Legionella by qPCR](#). J Microbiol Methods 88(2), 319-321, (2012), DOI: 10.1016/j.mimet.2011.12.010

Tseng, C. C., et al. [Detection of Viable Antibiotic-Resistant/Sensitive Acinetobacter baumannii in Indoor Air by Propidium Monoazide Quantitative PCR](#). Indoor Air, (2014), DOI: 10.1111/ina.12165

Venkateswaran, K., et al. [International Space Station environmental microbiome - microbial inventories of ISS filter debris](#). Appl Microbiol Biotechnol 98(14), 6453-6466, (2014), DOI: 10.1007/s00253-014-5650-6

Vesper, S., et al. [Quantifying fungal viability in air and water samples using quantitative PCR after treatment with propidium monoazide \(PMA\)](#). J Microbiol Methods 72(2), 180-184, (2008), DOI: 10.1016/j.mimet.2007.11.017

PMA References by Techniques

Sequencing

Auld, R. R., et al. [Seasonal variation in an acid mine drainage microbial community](#). Can J Microbiol 63(2), 137-152, (2017), DOI: 10.1139/cjm-2016-0215

Be, N. A., et al. [Whole metagenome profiles of particulates collected from the International Space Station](#). Microbiome 5(1), 81, (2017), DOI: 10.1186/s40168-017-0292-4

Be, N. A., et al. [Erratum to: Whole metagenome profiles of particulates collected from the International Space Station](#). Microbiome 5(1), 111, (2017), DOI: 10.1186/s40168-017-0330-2 10.1186/s40168-017-0330-2 [pii]

Bellehumeur, C., et al. [Propidium monoazide \(PMA\) and ethidium bromide monoazide \(EMA\) improve DNA array and high-throughput sequencing of porcine reproductive and respiratory syndrome virus identification](#). J Virol Methods 222, 182-191, (2015), DOI: S0166-0934(15)00230-X

- Blachowicz, A., et al. [Human presence impacts fungal diversity of inflated lunar/Mars analog habitat](#). Microbiome 5(1), 62, (2017), DOI: 10.1186/s40168-017-0280-8 10.1186/s40168-017-0280-8 [pii]
- Boutin, S., et al. [Comparison of Oropharyngeal Microbiota from Children with Asthma and Cystic Fibrosis](#). Mediators Inflamm 2017, 5047403, (2017), DOI: 10.1155/2017/5047403
- Boutin, S., et al. [Comparison of microbiomes from different niches of upper and lower airways in children and adolescents with cystic fibrosis](#). PLoS One 10(1), e0116029, (2015), DOI: 10.1371/journal.pone.0116029
- Checinska, A., et al. [Microbiomes of the dust particles collected from the International Space Station and Spacecraft Assembly Facilities](#). Microbiome 3, 50, (2015), DOI: 10.1186/s40168-015-0116-3
- Chiao, T. H., et al. [Differential resistance of drinking water bacterial populations to monochloramine disinfection](#). Environ Sci Technol 48(7), 4038-4047, (2014), DOI: 10.1021/es4055725
- Cuthbertson, L., et al. [Respiratory microbiota resistance and resilience to pulmonary exacerbation and subsequent antimicrobial intervention](#). ISME J, (2015), DOI: ismej2015198
- Cuthbertson, L., et al. [Time between collection and storage significantly influences bacterial sequence composition in sputum samples from cystic fibrosis respiratory infections](#). J Clin Microbiol 52(8), 3011-3016, (2014), DOI: 10.1128/JCM.00764-14
- Cuthbertson, L., et al. [Implications of multiple freeze-thawing on respiratory samples for culture-independent analyses](#). J Cyst Fibros, (2014), DOI: S1569-1993(14)00231-8 [pii] 10.1016/j.jcf.2014.10.004
- Di Maiuta, N., et al. [Assessment of bacteria and archaea in metalworking fluids using massive parallel 16S rRNA gene tag sequencing](#). Lett Appl Microbiol 65(4), 266-273, (2017), DOI: 10.1111/lam.12782
- Eramo, A., et al. [Peracetic acid disinfection kinetics for combined sewer overflows: indicator organisms, antibiotic resistance genes, and microbial community](#). Environ Sci (Camb) 3(6), 1061-1072, (2017), DOI: 10.1039/C7EW00184C
- Erkus, O., et al. [Use of propidium monoazide for selective profiling of viable microbial cells during Gouda cheese ripening](#). Int J Food Microbiol 228, 1-9, (2016), DOI: S0168-1605(16)30142-8
- Exterkate, R. A., et al. [The effect of propidium monoazide treatment on the measured bacterial composition of clinical samples after the use of a mouthwash](#). Clin Oral Investig, (2014), DOI: 10.1007/s00784-014-1297-z
- Fernandez, Y. M. M., et al. [Effect of mouthwashes on the composition and metabolic activity of oral biofilms grown in vitro](#). Clin Oral Investig, (2016), DOI: 10.1007/s00784-016-1876-2
- Fujimoto, M., et al. [Application of ion torrent sequencing to the assessment of the effect of alkali ballast water treatment on microbial community diversity](#). PLoS One 9(9), e107534, (2014), DOI: 10.1371/journal.pone.0107534
- Gomez-Alvarez, V., et al. [Biofilm community dynamics in bench-scale annular reactors simulating arrestment of chloraminated drinking water nitrification](#). Environ Sci Technol 48(10), 5448-5457, (2014), DOI: 10.1021/es5005208 (biofilm,

Guo, F. and Zhang, T. [Detecting the Nonviable and Heat-Tolerant Bacteria in Activated Sludge by Minimizing DNA from Dead Cells](#). *Microb Ecol*, (2014), DOI: 10.1007/s00248-014-0389-2

Kistler, J. O., et al. [Development and pyrosequencing analysis of an in-vitro oral biofilm model](#). *BMC Microbiol* 15(1), 24, (2015), DOI: 10.1186/s12866-015-0364-1

Li, R., et al. [Comparison of DNA-, PMA-, and RNA-based 16S rRNA Illumina sequencing for detection of live bacteria in water](#). *Sci Rep* 7(1), 5752, (2017), DOI: 10.1038/s41598-017-02516-3 10.1038/s41598-017-02516-3 [pii]

Li, Y. F., et al. [Spatial and temporal variations of microbial community in a mixed plug-flow loop reactor fed with dairy manure](#). *Microb Biotechnol* 7(4), 332-346, (2014), DOI: 10.1111/1751-7915.12125

Lo, R., et al. [Culture-independent bacterial community profiling of carbon dioxide treated raw milk](#). *Int J Food Microbiol* 233, 81-89, (2016), DOI: S0168-1605(16)30308-7

Mahnert, A., et al. [Cleanroom Maintenance Significantly Reduces Abundance but Not Diversity of Indoor Microbiomes](#). *PLoS One* 10(8), e0134848, (2015), DOI: 10.1371/journal.pone.0134848

Mayer, T., et al. [Microbial succession in an inflated lunar/Mars analog habitat during a 30-day human occupation](#). *Microbiome* 4(1), 22, (2016), DOI: 10.1186/s40168-016-0167-0

Moissl-Eichinger, C., et al. [Quo vadis? Microbial profiling revealed strong effects of cleanroom maintenance and routes of contamination in indoor environments](#). *Sci Rep* 5, 9156, (2015), DOI: srep09156

Moreno-Mesonero, L., et al. [Detection of viable *Helicobacter pylori* inside free-living amoebae in wastewater and drinking water samples from Eastern Spain](#). *Environ Microbiol* 19(10), 4103-4112, (2017), DOI: 10.1111/1462-2920.13856

Nguyen, L. D., et al. [Effects of Propidium Monoazide \(PMA\) Treatment on Mycobiome and Bacteriome Analysis of Cystic Fibrosis Airways during Exacerbation](#). *PLoS One* 11(12), e0168860, (2016), DOI: 10.1371/journal.pone.0168860 PONE-D-16-20893 [pii]

Nocker, A., et al. [Discrimination between live and dead cells in bacterial communities from environmental water samples analyzed by 454 pyrosequencing](#). *Int Microbiol* 13(2), 59-65, (2010),

Pang, Y. C., et al. [Shifts of live bacterial community in secondary effluent by chlorine disinfection revealed by Miseq high-throughput sequencing combined with propidium monoazide treatment](#). *Appl Microbiol Biotechnol* 100(14), 6435-6446, (2016), DOI: 10.1007/s00253-016-7452-5

Rogers, G. B., et al. [Reducing bias in bacterial community analysis of lower respiratory infections](#). *ISME J* DOI: 10.1038/ismej.2012.145, (2012), DOI: 10.1038/ismej.2012.145

Rogers, G. B., et al. [Ascitic microbiota composition is correlated with clinical severity in cirrhosis with portal hypertension](#). *PLoS One* 8(9), e74884, (2013), DOI: 10.1371/journal.pone.0074884

Tantikachornkiat, M., et al. [The use of propidium monoazide in conjunction with qPCR and Illumina sequencing to identify and quantify live yeasts and bacteria](#). *Int J Food Microbiol* 234, 53-59, (2016), DOI: 10.1016/j.ijfoodmicro.2016.06.031

Thompson, H., et al. [In vitro culture of previously uncultured oral bacterial photypes](#). Appl Environ Microbiol 81(24), 8307-8314, (2015), DOI: AEM.02156-15

Toledo Del Arbol, J., et al. [Changes in microbial diversity of brined green asparagus upon treatment with high hydrostatic pressure](#). Int J Food Microbiol 216, 1-8, (2016), DOI: 10.1016/j.ijfoodmicro.2015.09.001

Venkateswaran, K., et al. [International Space Station environmental microbiome - microbial inventories of ISS filter debris](#). Appl Microbiol Biotechnol 98(14), 6453-6466, (2014), DOI: 10.1007/s00253-014-5650-6

Weinmaier, T., et al. [A viability-linked metagenomic analysis of cleanroom environments: eukarya, prokaryotes, and viruses](#). Microbiome 3, 62, (2015), DOI: 10.1186/s40168-015-0129-y

Yang, Y., et al. [Effects of monochloramine and hydrogen peroxide on the bacterial community shifts in biologically treated wastewater](#). Chemosphere 189, 399-406, (2017), DOI: S0045-6535(17)31500-X [pii] 10.1016/j.chemosphere.2017.09.087

Yergeau, E., et al. [The functional potential of high Arctic permafrost revealed by metagenomic sequencing, qPCR and microarray analyses](#). ISME J 4(9), 1206-1214, (2010), DOI: 10.1038/ismej.2010.41

Young, G. R., et al. [Reducing Viability Bias in Analysis of Gut Microbiota in Preterm Infants at Risk of NEC and Sepsis](#). Front Cell Infect Microbiol 7, 237, (2017), DOI: 10.3389/fcimb.2017.00237

Isothermal Amplification (LAMP)

Cao, X., et al. [Detection of viable but nonculturable Vibrio parahaemolyticus in shrimp samples using improved real-time PCR and real-time LAMP methods](#). Food Control 103, 145-152, (2019), DOI: 10.1016/j.foodcont.2019.04.003 (PMA, PMAXx, real time PCR, LAMP, Vibrio parahaemolyticus)

Chen, S., et al. [Rapid detection of viable salmonellae in produce by coupling propidium monoazide with loop-mediated isothermal amplification](#). Appl Environ Microbiol 77(12), 4008-4016, (2011), DOI: 10.1128/AEM.00354-11

Fang, J., et al. [Propidium monoazide real-time loop-mediated isothermal amplification for specific visualization of viable Salmonella in food](#). Lett Appl Microbiol 67(1), 79-88, (2018), DOI: 10.1111/lam.12992

Fei, Z., et al. [A novel bioluminescent approach to the loop-mediated isothermal amplification-based detection of Lactobacillus salivarius in feed samples](#). J Microbiol Methods, 106209, (2021), DOI: 10.1016/j.mimet.2021.106209 (Lactobacillus, Feed samples)

Li, Y., et al. [The novel loop-mediated isothermal amplification based confirmation methodology on the bacteria in Viable but Non-Culturable \(VBNC\) state](#). Microb Pathog 111, 280-284, (2017), DOI: 10.1016/j.micpath.2017.09.007

Roumani, F., et al. [Loop-mediated isothermal amplification combined with immunomagnetic separation and propidium monoazide for the specific detection of viable Listeria monocytogenes in milk products, with an internal amplification control](#). Food Control 125, (2021), DOI: 10.1016/j.foodcont.2021.107975 (LAMP, Listeria, PMAXx)

Wan, C., et al. [Development of a propidium monoazide treatment combined with loop-mediated isothermal amplification \(PMA-LAMP\) assay for rapid detection of viable Listeria monocytogenes](#).

International Journal of Food Science & Technology 47(11), 2460-2467, (2012), DOI: 10.1111/j.1365-2621.2012.03123.x

Yan, M., et al. [PMA-LAMP for rapid detection of Escherichia coli and shiga toxins from viable but non-culturable state](#). Microb Pathog 105, 245-250, (2017), DOI: S0882-4010(16)30933-0 [pii] 10.1016/j.micpath.2017.02.001

Youn, S. Y., et al. [Application of loop-mediated isothermal amplification with propidium monoazide treatment to detect live Salmonella in chicken carcasses](#). Poult Sci, (2016), DOI: pew341

Zhao, X., et al. [Rapid Detection of Viable Escherichia coli O157 by Coupling Propidium Monoazide with Loop-Mediated Isothermal Amplification](#). J Microbiol Biotechnol 23(12), 1708-1716, (2013), DOI: 10.4014/jmb.1306.06003

Zhong, H., et al. [Virulence of thermolabile haemolysin tlh, gastroenteritis related pathogenicity tdh and trh of the pathogens Vibrio Parahemolyticus in Viable but Non-Culturable \(VBNC\) state](#). Microb Pathog 111, 352-356, (2017), DOI: 10.1016/j.micpath.2017.09.021

Droplet Digital PCR (ddPCR)

Gobert, G., et al. [Droplet digital PCR improves absolute quantification of viable lactic acid bacteria in faecal samples](#). J Microbiol Methods 148, 64-73, (2018), DOI: S0167-7012(18)30056-3 [pii] 10.1016/j.mimet.2018.03.004

Real-time PCR (RT-PCR)

Cao, X., et al. [Detection of viable but nonculturable Vibrio parahaemolyticus in shrimp samples using improved real-time PCR and real-time LAMP methods](#). Food Control 103, 145-152, (2019), DOI: 10.1016/j.foodcont.2019.04.003 (PMA, PMAXx, real time PCR, LAMP, Vibrio parahaemolyticus)

Da Collina, G. A., et al. [Oral hygiene in intensive care unit patients with photodynamic therapy: study protocol for randomised controlled trial](#). Trials 18(1), 385, (2017), DOI: 10.1186/s13063-017-2133-y

de Assuncao, T. M., et al. [Real time PCR quantification of viable Mycobacterium tuberculosis from sputum samples treated with propidium monoazide](#). Tuberculosis (Edinb) 94(4), 421-427, (2014), DOI: 10.1016/j.tube.2014.04.008

Fraisse, A., et al. [Discrimination of infectious and heat-treated norovirus by combining platinum compounds and real-time RT-PCR](#). Int J Food Microbiol 269, 64-74, (2018), DOI: 10.1016/j.ijfoodmicro.2018.01.015

Habtewold, T., et al. [Detection of viable plasmodium ookinetes in the midguts of anopheles coluzzi using PMA-qrtPCR](#). Parasit Vectors 8, 455, (2015), DOI: 10.1186/s13071-015-1087-8 10.1186/s13071-015-1087-8 [pii]

Karim, M. R., et al. [Propidium monoazide reverse transcriptase PCR and RT-qPCR for detecting infectious enterovirus and norovirus](#). J Virol Methods 219, 51-61, (2015), DOI: S0166-0934(15)00042-7

Kim, K., et al. [Development of a real-time RT-PCR assay combined with ethidium monoazide treatment for RNA viruses and its application to detect viral RNA after heat exposure](#). Water Sci Technol 63(3), 502-507, (2011), DOI: 10.2166/wst.2011.249

Lee, M., et al. [Detection of viable murine norovirus using the plaque assay and propidium-monoazide-combined real-time reverse transcription-polymerase chain reaction](#). J Virol Methods, (2015), DOI: S0166-0934(15)00162-7

Lopez-Galvez, F., et al. [Irrigating Lettuce with Wastewater Effluent: Does Disinfection with Chlorine Dioxide Inactivate Viruses?](#). J Environ Qual 47(5), 1139-1145, (2018), DOI: 10.2134/jeq2017.12.0485 (PMAXx, enteric viruses, wastewater irrigation, food testing)

Moreno, L., et al. [Application of viability PCR to discriminate the infectivity of hepatitis A virus in food samples](#). Int J Food Microbiol 201, 1-6, (2015), DOI: S0168-1605(15)00082-3

Oristo, S., et al. [Performance of pre-RT-qPCR treatments to discriminate infectious human rotaviruses and noroviruses from heat-inactivated viruses: applications of PMA/PMAXx, benzonase and RNase](#). J Appl Microbiol 124(4), 1008-1016, (2018), DOI: 10.1111/jam.13737 (norovirus, Rotavirus, RT-PCR)

Parshionikar, S., et al. [Use of propidium monoazide in reverse transcriptase PCR to distinguish between infectious and noninfectious enteric viruses in water samples](#). Appl Environ Microbiol 76(13), 4318-4326, (2010), DOI: 10.1128/AEM.02800-09

Qin, H., et al. [Multiplex real-time PCR coupled with sodium dodecyl sulphate and propidium monoazide for the simultaneous detection of viable Listeria monocytogenes, Cronobacter sakazakii, Staphylococcus aureus and Salmonella spp. in milk](#). International Dairy Journal 108, (2020), DOI: 10.1016/j.idairyj.2020.104739 (Listeria monocytogenes, Cronobacter sakazakii, Staphylococcus aureus and Salmonella spp.)

Randazzo, W., et al. [Evaluation of viability PCR performance for assessing norovirus infectivity in fresh-cut vegetables and irrigation water](#). Int J Food Microbiol 229, 1-6, (2016), DOI: 10.1016/j.ijfoodmicro.2016.04.010

Randazzo, W., et al. [Interlaboratory Comparative Study to Detect Potentially Infectious Human Enteric Viruses in Influent and Effluent Waters](#). Food Environ Virol, (2019), DOI: 10.1007/s12560-019-09392-2

Razafimahefa, R. M., et al. [Optimisation of a PMAXx-RT-qPCR Assay and the Preceding Extraction Method to Selectively Detect Infectious Murine Norovirus Particles in Mussels](#). Food Environ Virol 13(1), 93-106, (2021), DOI: 10.1007/s12560-020-09454-w (PMAXx, Murine Norovirus, mussels)

Sanchez, G., et al. [Discrimination of infectious hepatitis A viruses by propidium monoazide real-time RT-PCR](#). Food Environ Virol 4(1), 21-25, (2012), DOI: 10.1007/s12560-011-9074-5