


☐

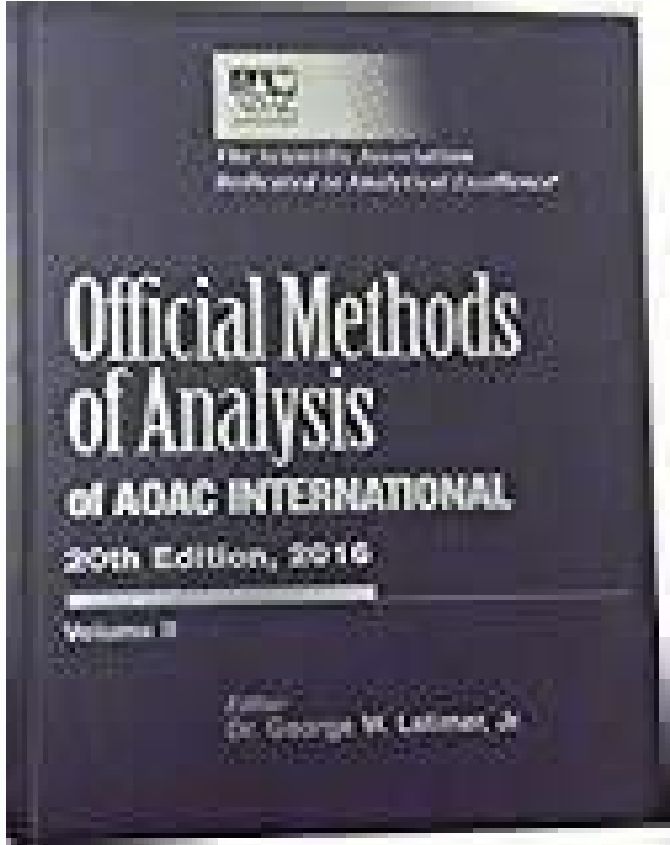
I'm not robot


reCAPTCHA

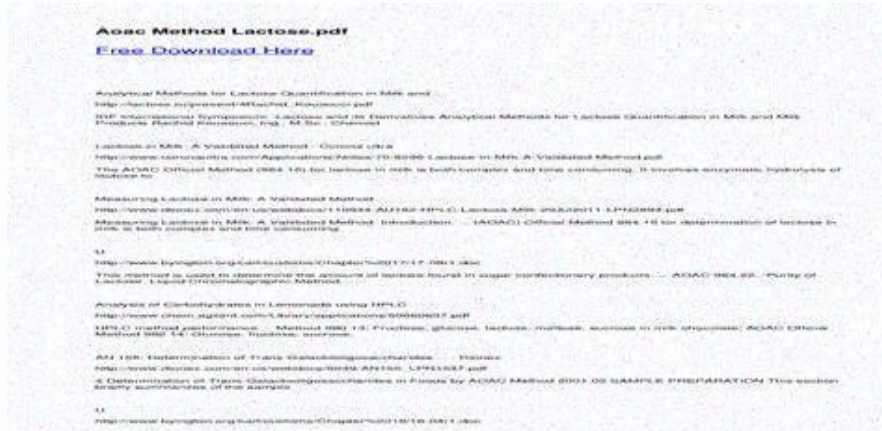
I am not robot!

Aoac analytical methods pdf

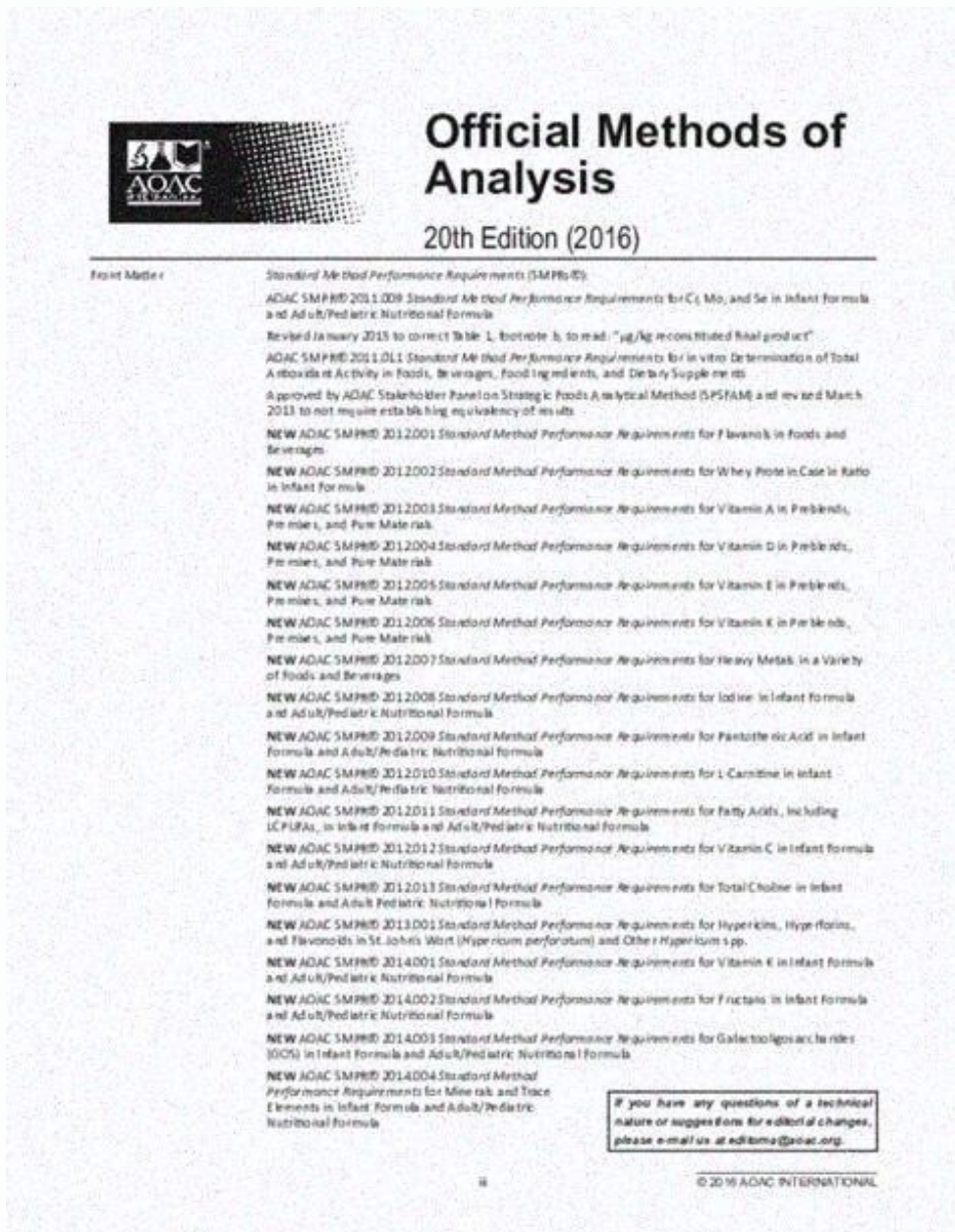
AOAC INTERNATIONAL brings together government, industry, and academia to establish standard methods of analysis that ensure the safety and integrity of foods and other products that impact public health around the world. Learn more Explore a collection of most cited and most read research from the past two years, plus browse the top performing articles from Altmetric published in the Journal of AOAC INTERNATIONAL. Browse the collection The Journal of AOAC INTERNATIONAL is seeking papers for the "Sampling" section of the journal. The scope of this section includes studies related to the primary sampling or laboratory sampling, i.e., the selection of a smaller mass/volume of material to represent a larger mass/volume. Learn more Want more? Advanced embedding details, examples, and help! Approved methods undergo rigorous, systematic scientific scrutiny to ensure they are highly credible and defensible—and can be used with confidence by industry, regulatory agencies, research organizations, testing laboratories, and academic institutions. The U.S. Code of Federal Regulations recognizes OMA methods, and they are legally defensible in court worldwide. The program evaluates: Chemistry methods, Microbiology methods, Molecular biology methods, Traditional benchtop methods, Instrumental methods, and Proprietary, commercial, and/or alternative methods. AOAC periodically issues Calls for Methods. Methods developers may also submit sole source/individual methods for methods not associated with an open Call for Methods. The AOAC OMA Program also reviews candidate methods previously certified through the Performance Tested MethodsSM (PTM) program. The program includes two levels of evaluation: Convening experts first evaluate First Action Official MethodsSM to develop voluntary consensus standards. The methods are then subject to collective expert judgment of methods using the adopted standards. Expert Review Panels review all AOAC Official MethodsSM for First Action AOAC Official Methods of AnalysisSM status, continuance, repeal, and/or to recommend for AOAC Final Action Official Methods status. Methods must be shown to be reproducible before they are considered for Final Action, meaning that they perform consistently despite deviations in personnel, equipment, location and laboratory set up. The Official Methods Board approves Final Action Official Methods following the Expert Review Panel review and approval. AOAC publishes approved methods in the Official Methods of Analysis and supporting method manuscripts in the Journal of AOAC INTERNATIONAL. In vitro methods for determination of total (hydrophilic and lipophilic) antioxidant activity in foods, beverages, food ingredients, and dietary supplements. Any analytical technique that meets the following method performance requirements is acceptable. Antioxidant activity.—The in vitro measurement of the total potential of a food, beverage, ingredient, or dietary supplement to inhibit or delay the oxidation of other compounds. Trolox activity will be used as the baseline unit of measurement to allow comparison between methods. Limit of detection (LOD).—The minimum concentration of a substance that can be measured and reported with 95% confidence that the antioxidant activity is greater than zero, and is determined from analysis of a low level of an antioxidant in a given matrix containing the antioxidant. Limit of quantitation (LOQ).—The minimum analyte concentration for which quantitative results may be obtained with 95% confidence. Recovery factor.—The fraction or percentage of the analyte that is recovered when the test sample is analyzed using the entire method. Repeatability precision.—Variation arising when all efforts are made to keep conditions constant by using the same instrument and operator, and repeating during a short time period. Expressed as the repeatability standard deviation (SDr), or % repeatability relative standard deviation (%RSDr). Reproducibility.—The SD or RSD calculated from among-laboratory data. Expressed as the reproducibility standard deviation (SDR) or % reproducibility relative standard deviation (%RSDR). Table 1 Method performance requirements Analytical range 400–400,000b Limit of detection (LOD) c 133b Limit of quantitation (LOQ) d 400b Repeatability (RSDr) e 400b 8.6% 200,000b 3.4% 400,000b 3.1% Recovery factor 90–110% Reproducibility (RSDR) f 400b 12.9% 200,000b 5.1% 400,000b 4.36% Suitable methods will include blank check samples and check standards at the lowest point and midrange point of the analytical range, and a protocol to demonstrate suitability. Certified reference materials are available and should be used as appropriate. Recommended level of validation: Official Methods of AnalysisSM. Approved by AOAC Stakeholder Panel on Strategic Food Analytical Methods (SPSFAM). Final Version Date: March 21, 2012. Revised March 13, 2013. Effective Date: March 14, 2013. Determination of flavan-3-ols as relevant to the matrix in foods, notably in one or more of the following matrices: tea, wine, fruit and fruit juices, cocoa powder, chocolate, spices, and/or herbs. For the purpose of this SMPR, flavan-3-ols (sometimes referred to as flavanols) are the class of flavonoids based on the 2-phenyl-3,4-dihydro-2H-chromen-3-ol skeleton. Stereoisomers of flavanol compounds may include the catechins (e.g., catechins, gallic catechin, catechins-3-gallate, and gallic catechin-3-gallate) and the epicatechins (e.g., epicatechin, epigallocatechin, epicatechin-3-gallate, and epigallocatechin-3-gallate). See Figure 1.



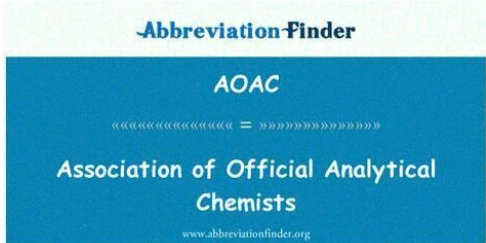
Methods developers may also submit sole source/individual methods for methods not associated with an open Call for Methods. The AOAC OMA Program also reviews candidate methods previously certified through the Performance Tested MethodsSM (PTM) program. The program includes two levels of evaluation: Convening experts first evaluate First Action Official MethodsSM to develop voluntary consensus standards. The methods are then subject to collective expert judgment of methods using the adopted standards. Expert Review Panels review all AOAC Official MethodsSM for First Action AOAC Official Methods of AnalysisSM status, continuance, repeal, and/or to recommend for AOAC Final Action Official Methods status. Methods must be shown to be reproducible before they are considered for Final Action, meaning that they perform consistently despite deviations in personnel, equipment, location and laboratory set up. The Official Methods Board approves Final Action Official Methods following the Expert Review Panel review and approval. AOAC publishes approved methods in the Official Methods of Analysis and supporting method manuscripts in the Journal of AOAC INTERNATIONAL. In vitro methods for determination of total (hydrophilic and lipophilic) antioxidant activity in foods, beverages, food ingredients, and dietary supplements. Any analytical technique that meets the following method performance requirements is acceptable. Antioxidant activity.—The in vitro measurement of the total potential of a food, beverage, ingredient, or dietary supplement to inhibit or delay the oxidation of other compounds. Trolox activity will be used as the baseline unit of measurement to allow comparison between methods. Limit of detection (LOD).—The minimum concentration of a substance that can be measured and reported with 95% confidence that the antioxidant activity is greater than zero, and is determined from analysis of a low level of an antioxidant in a given matrix containing the antioxidant. Limit of quantitation (LOQ).—The minimum analyte concentration for which quantitative results may be obtained with 95% confidence. Recovery factor.—The fraction or percentage of the analyte that is recovered when the test sample is analyzed using the entire method. Repeatability precision.—Variation arising when all efforts are made to keep conditions constant by using the same instrument and operator, and repeating during a short time period. Expressed as the repeatability standard deviation (SDr), or % repeatability relative standard deviation (%RSDr). Reproducibility.—The SD or RSD calculated from among-laboratory data. Expressed as the reproducibility standard deviation (SDR) or % reproducibility relative standard deviation (%RSDR).



AOAC periodically issues Calls for Methods. Methods developers may also submit sole source/individual methods for methods not associated with an open Call for Methods. The AOAC OMA Program also reviews candidate methods previously certified through the Performance Tested MethodsSM (PTM) program. The program includes two levels of evaluation: Convening experts first evaluate First Action Official MethodsSM to develop voluntary consensus standards. The methods are then subject to collective expert judgment of methods using the adopted standards. Expert Review Panels review all AOAC Official MethodsSM for First Action AOAC Official Methods of AnalysisSM status, continuance, repeal, and/or to recommend for AOAC Final Action Official Methods status. Methods must be shown to be reproducible before they are considered for Final Action, meaning that they perform consistently despite deviations in personnel, equipment, location and laboratory set up. The Official Methods Board approves Final Action Official Methods following the Expert Review Panel review and approval.



AOAC publishes approved methods in the Official Methods of Analysis and supporting method manuscripts in the Journal of AOAC INTERNATIONAL. In vitro methods for determination of total (hydrophilic and lipophilic) antioxidant activity in foods, beverages, food ingredients, and dietary supplements. Any analytical technique that meets the following method performance requirements is acceptable. Antioxidant activity.—The in vitro measurement of the total potential of a food, beverage, ingredient, or dietary supplement to inhibit or delay the oxidation of other compounds. Trolox activity will be used as the baseline unit of measurement to allow comparison between methods. Limit of detection (LOD).—The minimum concentration of a substance that can be measured and reported with 95% confidence that the antioxidant activity is greater than zero, and is determined from analysis of a low level of an antioxidant in a given matrix containing the antioxidant. Limit of quantitation (LOQ).—The minimum analyte concentration for which quantitative results may be obtained with 95% confidence. Recovery factor.—The fraction or percentage of the analyte that is recovered when the test sample is analyzed using the entire method. Repeatability precision.—Variation arising when all efforts are made to keep conditions constant by using the same instrument and operator, and repeating during a short time period.



Expert Review Panels review all AOAC Official MethodsSM for First Action AOAC Official Methods of AnalysisSM status, continuance, repeal, and/or to recommend for AOAC Final Action Official Methods status. Methods must be shown to be reproducible before they are considered for Final Action, meaning that they perform consistently despite deviations in personnel, equipment, location and laboratory set up. The Official Methods Board approves Final Action Official Methods following the Expert Review Panel review and approval. AOAC publishes approved methods in the Official Methods of Analysis and supporting method manuscripts in the Journal of AOAC INTERNATIONAL. In vitro methods for determination of total (hydrophilic and lipophilic) antioxidant activity in foods, beverages, food ingredients, and dietary supplements. Any analytical technique that meets the following method performance requirements is acceptable. Antioxidant activity.—The in vitro measurement of the total potential of a food, beverage, ingredient, or dietary supplement to inhibit or delay the oxidation of other compounds. Trolox activity will be used as the baseline unit of measurement to allow comparison between methods. Limit of detection (LOD).—The minimum concentration of a substance that can be measured and reported with 95% confidence that the antioxidant activity is greater than zero, and is determined from analysis of a low level of an antioxidant in a given matrix containing the antioxidant. Limit of quantitation (LOQ).—The minimum analyte concentration for which quantitative results may be obtained with 95% confidence. Recovery factor.—The fraction or percentage of the analyte that is recovered when the test sample is analyzed using the entire method. Repeatability precision.—Variation arising when all efforts are made to keep conditions constant by using the same instrument and operator, and repeating during a short time period. Expressed as the repeatability standard deviation (SDr), or % repeatability relative standard deviation (%RSDr). Reproducibility.—The SD or RSD calculated from among-laboratory data. Expressed as the reproducibility standard deviation (SDR) or % reproducibility relative standard deviation (%RSDR). Table 1 Method performance requirements Analytical range 400–400,000b Limit of detection (LOD) c 133b Limit of quantitation (LOQ) d 400b Repeatability (RSDr) e 400b 8.6% 200,000b 3.4% 400,000b 3.1% Recovery factor 90–110% Reproducibility (RSDR) f 400b 12.9% 200,000b 5.1% 400,000b 4.36% Suitable methods will include blank check samples and check standards at the lowest point and midrange point of the analytical range, and a protocol to demonstrate suitability. Certified reference materials are available and should be used as appropriate. Recommended level of validation: Official Methods of AnalysisSM. Approved by AOAC Stakeholder Panel on Strategic Food Analytical Methods (SPSFAM). Final Version Date: March 21, 2012. Revised March 13, 2013. Effective Date: March 14, 2013. Determination of flavan-3-ols as relevant to the matrix in foods, notably in one or more of the following matrices: tea, wine, fruit and fruit juices, cocoa powder, chocolate, spices, and/or herbs. For the purpose of this SMPR, flavan-3-ols (sometimes referred to as flavanols) are the class of flavonoids based on the 2-phenyl-3,4-dihydro-2H-chromen-3-ol skeleton. Stereoisomers of flavanol compounds may include the catechins (e.g., catechins, gallic catechin, catechins-3-gallate, and gallic catechin-3-gallate) and the epicatechins (e.g., epicatechin, epigallocatechin, epicatechin-3-gallate, and epigallocatechin-3-gallate). See Figure 1. Methods should be able to determine appropriate flavanols in a given matrix. The quantity of procyanidins may also be relevant depending on the matrix being analyzed. Open in new tab Download slide Structure of flavan-3-ols. USDA Database for the Flavonoid Content of Selected Foods, Nutrient Data Laboratory, Food Composition Laboratory, Beltsville Human Nutrition Research Center, Agricultural Research Service, U.S. Department of Agriculture, 2003.

Guidelines for Laboratories Performing Microbiological and Chemical Analyses of Food, Dietary Supplements, and Pharmaceuticals

Dietary supplements.—A product intended for ingestion that contains a “dietary ingredient” intended to add further nutritional value to (supplement) the diet. Dietary supplements may be found in many forms such as tablets, capsules, softgels, gelscaps, liquids, or powders.

Limit of quantitation (LOQ).—The minimum concentration or mass of analyte in a given matrix that can be reported as a quantitative result. Quantitative method.—Method of analysis which response is the amount of the analyte measured either directly (enumeration in a mass or a volume), or indirectly (color, absorbance, impedance, etc.) in a certain amount of sample. Recovery.—The fraction or percentage of spiked analyte that is recovered when the test sample is analyzed using the entire method. Repeatability.—Variation arising when all efforts are made to keep conditions constant by using the same instrument and operator and repeating during a short time period. Expressed as the standard deviation of replicate results. Reproducibility.—The variation between different laboratories. Suitability.—The ability of a method to provide reliable results under specified conditions. Suitability testing.—Suitability testing of dietary supplements CapsulesExtractsLiquidsPowdersSoftgel capsulesTabletsTincturesGummies Table 2Method performance requirements (part 1) Parameter Requirement Limit of quantitation (LOQ; %) \leq 0.01Analytical range, % \leq 0.03–55 Table 3Method performance requirements (part 2) Range, % Liquids Solids 0.03–15 >15–55 0.03–15 >15–55 Rec. #97-10397-10390-10797-10393RSDR, % \leq 10.5 \leq 15 \leq 15ORSDR, % \leq 15 \leq 8 \leq 2015 Suitable materials will include blank check samples, and check standards at the lowest point and midrange point of the analytical range. Refer to Annex F: Development and Use of In-House Reference Materials in Appendix F: Guidelines for Standard Method Performance Requirements, Official Methods of Analysis of AOAC INTERNATIONAL (2019) 21st Ed., AOAC INTERNATIONAL, Rockville, MD, USA (Appendix D: Guidelines for Collaborative Study Procedures to Validate Characteristics of a Method of Analysis, Official Methods of Analysis of AOAC INTERNATIONAL (2019) 21st Ed., AOAC INTERNATIONAL, Rockville, MD, USA (<https://academic.oup.com/aoac-publications>) Appendix F: Guidelines for Standard Method Performance Requirements, Official Methods of Analysis of AOAC INTERNATIONAL (2019) 21st Ed., AOAC INTERNATIONAL, Rockville, MD, USA (Appendix K: Guidelines for Dietary Supplements and Botanicals, Official Methods of Analysis of AOAC INTERNATIONAL (2019) 21st Ed., AOAC INTERNATIONAL, Rockville, MD, USA (<https://academic.oup.com/aoac-publications>) Approved by the AOAC Stakeholder Panel on Strategic Food Analytical Methods (SPSAM) on March 13, 2017. Final Version Date: March 13, 2017. Intended Use: Consensus-Based Reference Method for use in confirmatory testing of dietary supplement products. The AOAC SMPRs are developed by the AOAC International community of experts from government, academia, industry, regulatory organizations, contract laboratories, test kit manufacturers, and academic institutions. AOAC SMPRs are used by AOAC expert review panels in their evaluation of validation study data for method being considered for Performance Tested MethodsSM or AOAC Official Methods of AnalysisSM, and can be used as acceptance criteria for verification at user laboratories. The method will be able to identify the presence of Type-A proanthocyanidin in cranberry (*Vaccinium macrocarpon*) in one or more of the following: fruit, juice, beverage, dried cranberry fruit, cranberry sauce, ingredients (concentrates, extracts, powders, and presscake); or dietary supplements (listed in Table 1).

