AOAC INTERNATIONAL Scientists Approve Confirmatory Screening Test for Detecting Veterinary Drug Residues in Foods

New Official Method expected to facilitate safety testing of products in the global marketplace

ROCKVILLE, MARYLAND, USA, April 30, 2020 /EINPresswire.com/ -- AOAC INTERNATIONAL today announced approval of a new First Action Official Method of Analysis℠ that can streamline screening for residues of 154 veterinary drugs in a broad range of animal food products.

Developed and submitted by scientists at Nestlé Research (Lausanne, Switzerland) in response to an AOAC Call for Methods, the liquid chromatography tandem mass spectrometry approach is applicable for screening and confirming 105 antibiotic, 41 antiparasitic, 5 anti-inflammatory agents, and 3 tranquilizers in a broad range of food products, including milk-, meat-, and fish-based ingredients and processed products (skimmed milk powder, fat-filled milk powder, whey protein, lactose, casein, infant formula, infant cereals, and baby foods, among others). The method was approved on April 24, 2020, during AOAC's Analytical Methods Week.

Consumers have increasingly become concerned about veterinary drug residues in food, even more so with the high-profile issue of antimicrobial resistance emphasized by the World Health Organization. But controlling veterinary drug residues in the food sector is challenging due to the large number of drugs administered to food source animals, the diversity of animals and derived products, and a complex international regulatory environment.

"As the first multi-residue laboratory method to receive AOAC's Official Method designation, this is a milestone in the veterinary drug residue analytical community," said Dr. Joe Boison, chair of the Expert Review Panel that approved the method.

More than 200 compounds from veterinary drugs have been identified as presenting a potential health risk for consumers and are regulated at the national level or internationally through global food standards organizations. Most are regulated based on maximum residue limits, while some are banned for human consumption in food. Reliable analytical solutions are needed to monitor these substances in a wide range of food commodities. Several confirmatory methods based on liquid chromatography mass spectrometry are available, but they are more limited in the scope of food products, or matrices, they can be used with.

Research in the U.S. and the European Union indicates that rates of veterinary drug residue non-compliance are generally low, so the goal of this method was to provide food companies and regulators with an efficient pass/fail screen to increase throughput together with reliability. Samples flagged as suspect can then be analyzed for quantitation.

"Nestlé produces an enormous variety of food and has 21 control laboratories worldwide equipped with mass spectrometry instruments. We needed a more cost-effective method that

could screen across a broad range of matrices," explained Thierry Delatour, Group Leader at Nestlé Research and one of the method's authors.

Critically for the food industry, the screening tool is well adapted to the global supply chain that includes not just raw materials such as milk, but also derivatives, such as milk powders that are heavily traded worldwide.

Dr. Boison added, "Once this method achieves Final Action status, we expect it to be very valuable in dispute resolution cases to facilitate international trade involving food animal products."

Official Methods of Analysis of AOAC INTERNATIONAL are microbiological and chemical analysis procedures that have undergone rigorous formal validation by AOAC INTERNATIONAL. After a two-year tracking period, "First Action" methods are reviewed for approval as "Final Action" methods, which are published in the Official Methods of Analysis of AOAC INTERNATIONAL, a globally recognized standards resource for analytical scientists.

The approval of this method is the result of a multi-year community effort that was initiated with Nestlé to meet the need for a reliable confirmatory screening test. Managed by AOAC from inception to conclusion, the project included a year-long effort to develop a global stakeholder consensus on Standard Method Performance Requirements (SMPR®) for the more than 150 drug residues covered, and their residue limits in various commodities. The SMPR development was supported in part by Nestlé, Abbott Nutrition, Fonterra, Thermo Scientific, and Tyson Corporation.

The method was evaluated against SMPR 2018.010 which details the criteria needed for a valid screening and identification method for regulated veterinary drug residues in food.

"The volunteers on the Working Group, the Expert Review Panel and the AOAC staff were highly committed and it was a pleasure to work with them," said Thierry Delatour. "Everyone was aware of the challenges and agreed on what direction to go. It was a very clear and fruitful process."

"Screening 154 Veterinary Drug Residues in Animal Source Foods by LC-MS/MS" will be published in the Journal of AOAC INTERNATIONAL and Official Methods of Analysis.

For more information, please contact Deborah McKenzie, AOAC INTERNATIONAL Senior Director of Standards, at dmckenzie@aoac.org.

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About AOAC INTERNATIONAL

AOAC INTERNATIONAL is a globally recognized, 501(c)(3), independent, third party, not-for-profit association and voluntary consensus standards developing organization founded in 1884. When analytical needs arise within a community or industry, AOAC INTERNATIONAL is the forum for finding appropriate science-based solutions through the development of microbiological and chemical standards. The AOAC Official Methods of Analysis database is used by food scientists around the world to facilitate public health and safety and to promote trade. For more information please visit www.AOAC.org.

Marida Hines
AOAC INTERNATIONAL
+1 240-912-1445
email us here
Visit us on social media:
LinkedIn

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