EAT. Aug 10. Written By Paul Healey. The banned drug clenbuterol increases muscle mass in animals but can cause tremors, cardiac problems, and worse in humans. An illegal drug that can be deadly to humans has been found in some US pork exports. Meat from the world's largest pork producers - Virginia-based Smithfield Foods and Swift Pork .

Pork from ractopamine-fed pigs is safe for consumption

As a β-agonist, clenbuterol (CLB) was primitively employed to treat respiratory diseases such as bronchitis, asthma, chronic pneumonia, and pulmonary diseases (Genetzky and Loparco 1985).

Sensitive Determination of Toxic Clenbuterol in Pig Meat and Pig Liver .

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Sensitive Determination of Toxic Clenbuterol in Pig Meat and Pig Liver Based on a Carbon Nanopolymer Composite

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Abstract The acidified single-walled carbon nanotubes (SWCNTs) were self-assembled on graphene oxide (GO) and then ultrasonically dispersed in a copolymer, Nafion solution, to form a GO/SWCNTs-Nafion polymer nanocomposite, which was employed to modify glassy carbon electrode (GCE). The surface morphological characteristics of different modified electrodes including bare GCE, GO-Nafion/GCE, and GO/SWCNTs-Nafion/GCE were imaged by scanning electron microscopy. For comparison, the differential pulse voltammetry and cyclic voltammetry behaviors were investigated, showing that the GO/SWCNTs-Nafion polymer composite has strong enhancement effect towards oxidation of clenbuterol (CLB). And the corresponding mechanism has been well discussed. During the reaction process, the anilino group of CLB molecule (**1**) was firstly oxidized to form a radical cation (**2**), exhibiting a characteristic oxidation peak (I) at 0.95 V, then two radical cations reacting via head-to-head coupling to form a diphenylamine intermediate (**3**), which was transformed into a CLB dimmer (**4**) through an azo bond by intramolecular electrons transferring under low potential, exhibiting a pair of reversible oxidation peak (II) and reduction peak (III). Under the optimum conditions, the composite modified electrode showed linear response to CLB in a concentration range of 1.0×10^{-8}–6.0×10^{-6} mol/L with a detection limit of 6.0×10^{-9} mol/L. The modified electrode possessed good selectivity, reproducibility, and stability. In comparison with two routine analytical methods like ELISA kit and high-performance liquid chromatography (HPLC), the electrode can be successfully applied to determination of content of CLB in pig meat and pig liver samples with a recovery rate of 96.4~104.2%, suggesting a promising application in food security field.

Keywords Clenbuterol · Graphene oxide · Single-walled carbon nanotube · Nafion polymer · Pig meat · Pig liver

Introduction

As a β-agonist, clenbuterol (CLB) was primitively employed to treat respiratory diseases such as bronchitis, asthma, chronic pneumonia, and pulmonary diseases (Genetzky and Loparco 1985). In the past decades, it has often been abused in feedstuff as a food additive for livestock to promote muscle growth and reduce fat level (Malucelli et al. 1994). Thus, CLB has been well known as one kind of the so-called "lean meat agent (LMA)." However, the residues of CLB in the domesticated animals and their meat products can accumulate in human body and cause poisoning symptoms such as mental anxiety, cardiac palpitation, muscular tremor, prostatitis, and even death in children and elderly people (Martinez-Navarro 1990; Mazzanti et al. 2007; Mitchell and Dunnavan 1998; Vale 2007). Additionally, CLB has also been illicitly employed by sportsmen as analeptic to improve their

Chao-Zhi Lv and Yan Xun contributed equally to this work.

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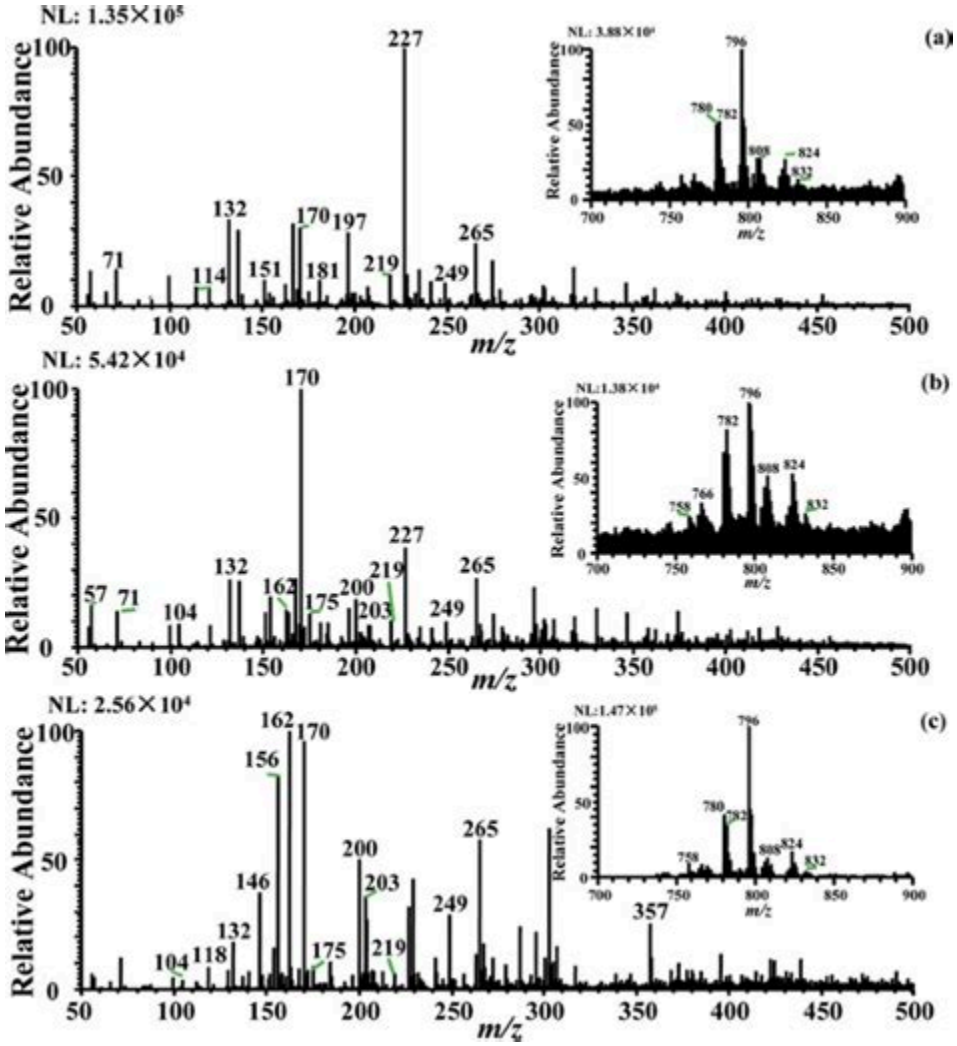
While RAC has been authorized as a feed additive for pigs and cattle in a limited number of countries, a great majority of jurisdictions, including the European Union (EU), China, Russia, and Taiwan, have banned its use on safety grounds. . Pig samples: HPLC-UV: Ractopamine, clenbuterol, and salbutamol: 0. 5-50 ppb 0. 5-50 ppb 0. 2-20 ppb .

Metabolic Effects of Clenbuterol and Salbutamol on Pork Meat Studied .



18 November 2008 4 minute read Asia Since November 10, 70 employees of the Zhongmao Plastics Products company in Jiaxing have been diagnosed with the poisoning, according to Epoch Times. A pork dish served at the Zhongmao cafeteria lunch meal was identified as the source.

Clenbuterol: Uses, Side Effects, Risks, and Legal Status - Verywell Fit

Originally released April 2011 Updated June 2021 The use of clenbuterol as a growth promoting substance in animal husbandry (beef, pork, lamb or poultry) in Mexico, China, and Guatemala has led to numerous positive anti-doping tests over the past decade.

Clenbuterol: Effects and Usage in Livestock and Show Animals

The suspects were detained after national broadcaster China Central Television aired a report on Tuesday about pigs testing positive for clenbuterol hydrochloride, known in China as 'lean meat .

Illegal muscle-building drug clenbuterol found in some U. S. pork - The .

Chinese livestock farmers began using clenbuterol in pig feed in the late 1980s to boost growth and get animals to market faster, but it was banned in 2002 as the health risks of eating the meat .

Ractopamine at the Center of Decades-Long Scientific and Legal Disputes .

biomolecules

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Review

Ractopamine at the Center of Decades-Long Scientific and Legal Disputes: A Lesson on Benefits, Safety Issues, and Conflicts

Kumail Abbas [1], Aqeel Raza [2], Ross D. Vasquez [3,4,5], Marri Jmelou M. Roldan [4,5], Nemi Malhotra [1], Jong-Chin Huang [6], Olivia E. M. Buenafe [7], Kelvin H. -C. Chen [6], Shih-Shin Liang [8,9,10,*] and Chung-Der Hsiao [1,8,11,12,*]

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Citation: Abbas, K.; Raza, A.; Vasquez, R.D.; Roldan, M.J.M.; Malhotra, N.; Huang, J.-C.; Buenafe, O.E.M.; Chen, K.H.-C.; Liang, S.-S.; Hsiao, C.-D. Ractopamine at the Center of Decades-Long Scientific and Legal Disputes: A Lesson on Benefits, Safety Issues, and Conflicts. *Biomolecules* **2022**, *12*, 1342. https://doi.org/10.3390/biom12101342

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Abstract: Ractopamine (RAC) is a synthetic phenethanolamine, β–adrenergic agonist used as a feed additive to develop leanness and increase feed conversion efficiency in different farm animals. While RAC has been authorized as a feed additive for pigs and cattle in a limited number of countries, a great majority of jurisdictions, including the European Union (EU), China, Russia, and Taiwan, have banned its use on safety grounds. RAC has been under long scientific and political discussion as a controversial antibiotic as a feed additive. Here, we will present significant information on RAC regarding its application, detection methods, conflicts, and legal divisions that play a major role in controversial deadlock and why this issue warrants the attention of scientists, agriculturists, environmentalists, and health advocates. In this review, we highlight the potential toxicities of RAC on aquatic animals to emphasize scientific evidence and reports on the potentially harmful effects of RAC on the aquatic environment and human health.

Keywords: ractopamine; feed additive; toxicity; aquatic animals

1. Introduction

Feed additives are nonnutritive products added to the basic feed mix to enhance productive function and growth, preserve feeds, increase the efficiency of feed utilization, or benefit metabolism and animal health [1,2]. Numerous studies and individual experiences gained by livestock owners have shown that the comprehensive feeding of animals, especially for high-yielding cattle, is impossible without highly effective feed additives such as antibiotics [3,4]. The beneficial effect of antibiotics as a growth stimulant was discovered in the 1940s [1,2]. Their uses in aquaculture for disease control, prevention, and growth promoters have been practiced for a long time. However, the unrestricted and widespread use of prophylactic antibiotics in aquaculture has caused a series of developments harmful

Ractopamine and Clenbuterol Urinary Residues in Pigs As Food-Producing Animals; Meat and Meat Products Market Summary; 2017 Anti-Doping Testing Figures Report; Pork and Swine: Industry and Trade Summary . one of them being Clenbuterol, into the US and distributed around Kansas, Nebraska, Wisconsin, Minnesota, Pennsylvania, and Illinois[12 .

Ventipulmin Syrup (clenbuterol hydrochloride) - Drugs

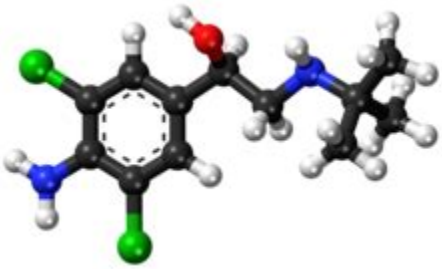

NDC 0010-3017-03
Ventipulmin® Syrup
Clenbuterol HCl 72.5 mcg/mL
Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.
Caution: Federal law prohibits the extralabel use of this drug in food animals.
For oral use in horses only
Net Contents: 330 mL
NADA 140-973, Approved by FDA

The phenethanolamine β 2 -adrenergic agonist clenbuterol is a xenobiotic growth promotant, demonstrated to be administered illegally as a repartitioning agent in meat producing animals in Europe (Kuiper, Noordam, van Dooren-Flipsen, Schilt, & Roos, 1998).

TV report on clenbuterol in pigs sees 22 people held

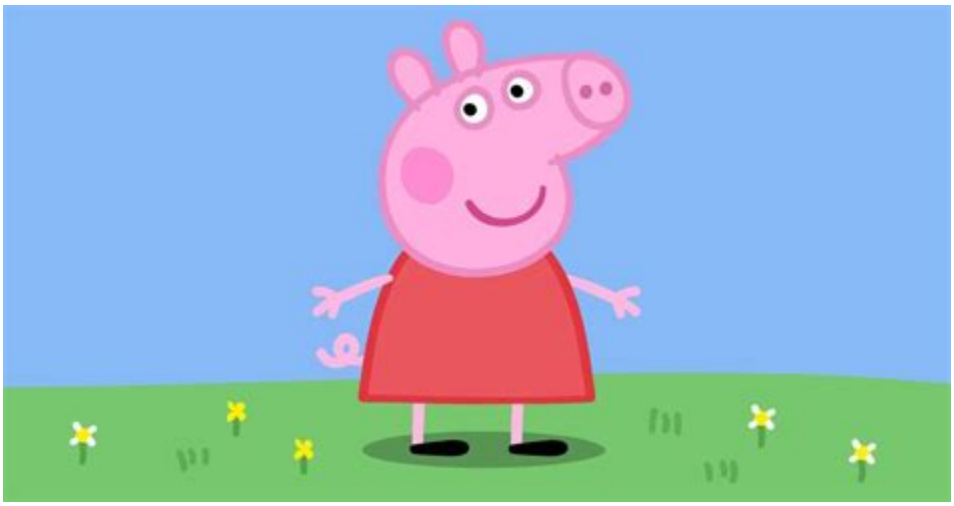
Clenbuterol (4-amino-alpha- [(tert-butylamino) methyl]• 3, 5-dichlorobenzyl alcohol hydrochloride) is a beta-2-adrenergic agonist which provides bronchodilating properties as well as other effects, with minimum effect on the cardiovascular system. It is provided as a colorless, palatable syrup.

Clenbuterol - Wikipedia



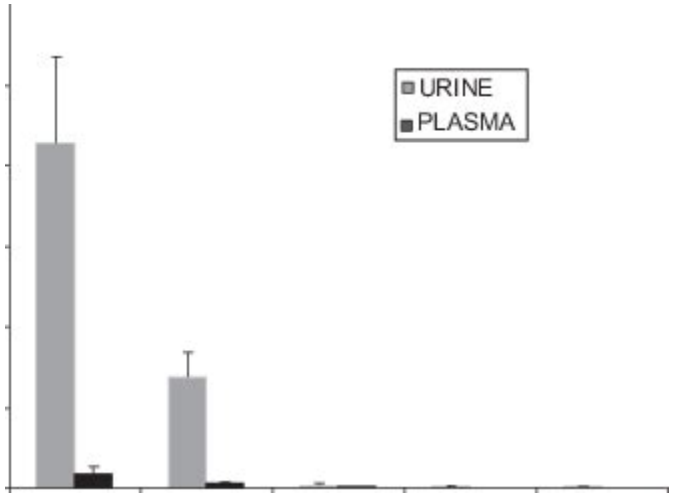
The zero-tolerance policy for ractopamine in China and EU is also influenced by consumer safety events several years ago caused by improper use of clenbuterol, a different beta-agonist, and concerns over protecting their domestic pork industries from competition. "Ractopamine-free" requires zero exposure to ractopamine

American parents fear Peppa Pig makes children bratty (and British .



In the 1980s, blue-ear pig disease had become a serious global problem. Symptoms include respiratory distress, problems reproducing and a high fatality rate in piglets, and the disease was eating .

Clenbuterol residues in pig muscle after repeat administration in a .

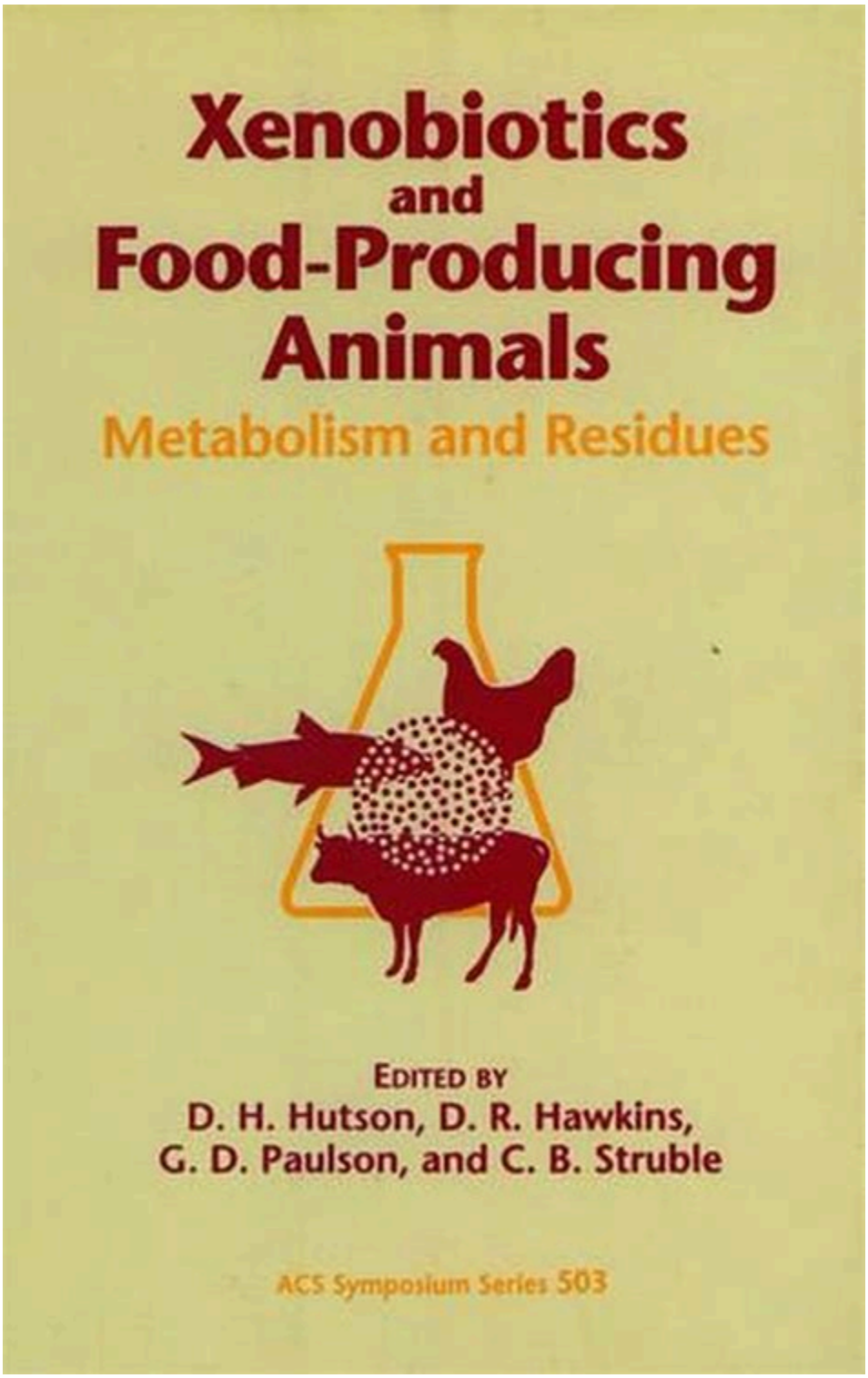


Illegal muscle-building drug clenbuterol found in some U. S. pork - The Washington Post Illegal muscle-building drug found in some U. S. pork exports By Tim Carman July 21, 2023 at 12:00 p. m. EDT.

Using CRISPR gene editing to prevent pigs from getting blue-ear pig disease

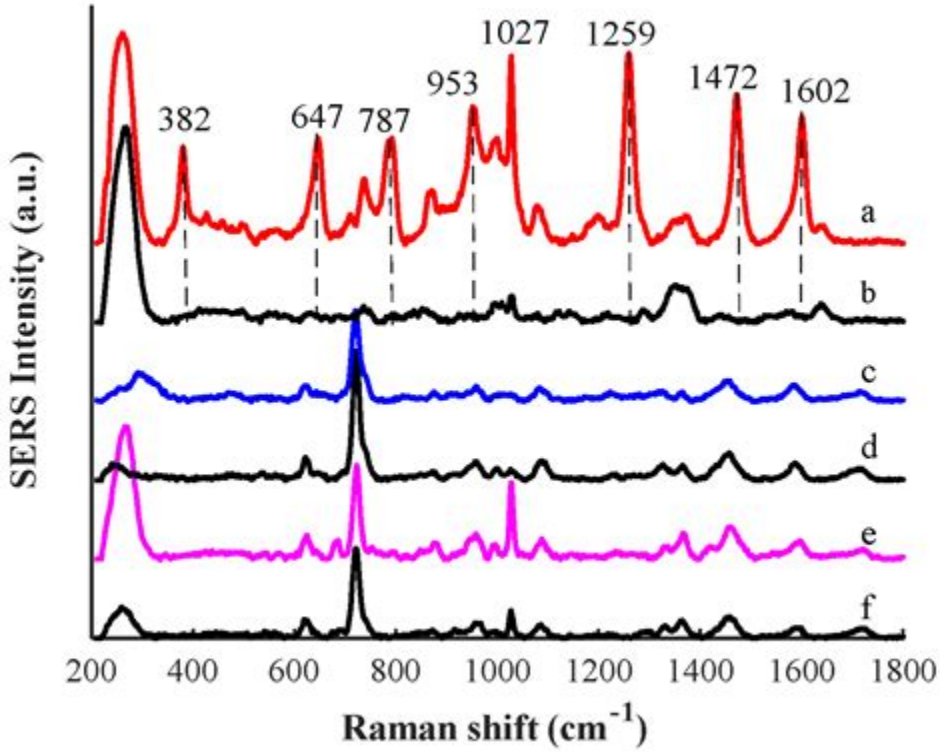
centrifuge tube. Then, 200 L of 10 g/mL clenbuterol solution was added. The mixture was vortexed and mixed for 1 min. Thus, a standard sample of pork containing clenbuterol (10 g/g) was obtained. Likewise, pork samples containing clenbuterol (1, 3, 5, 7, 9, and 10 g/g) were prepared by adding 200 L of clenbuterol aqueous solutions with different

Xenobiotic clenbuterol in food producing male pigs: Various tissue .



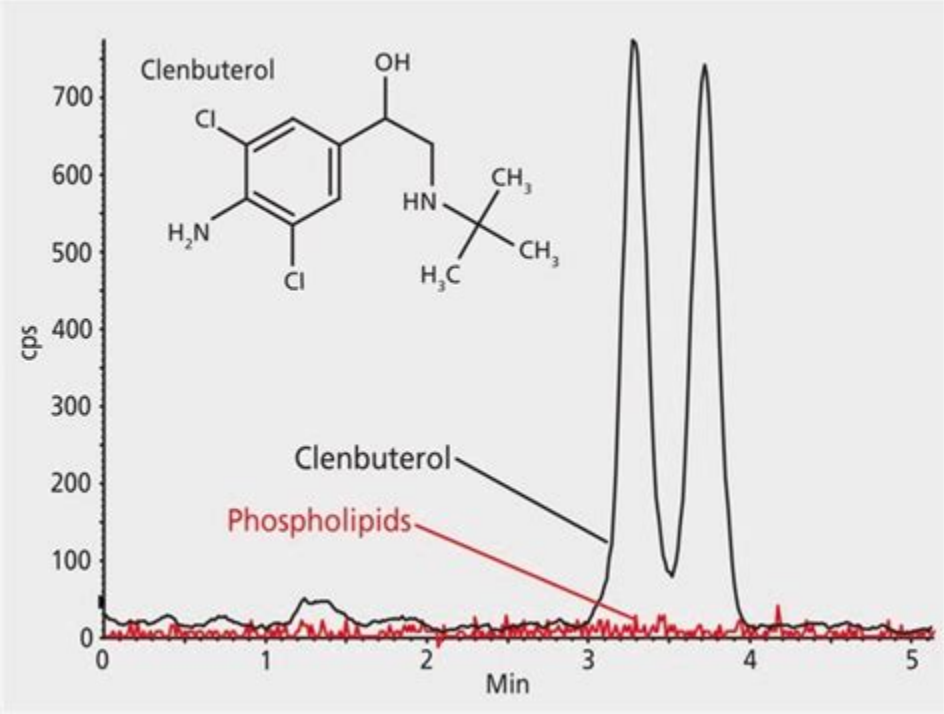
Clenbuterol increases your risk of heart attacks and other heart damage, and irregular heart rhythms. Additional side effects include muscle tremors, increased perspiration, and blood pressure, insomnia, headache, nausea, and vomiting. The drug can also induce mood changes, agitation, and depression.

PDF Rapid Detection of Clenbuterol Residues in Pork Using Enhanced Raman .



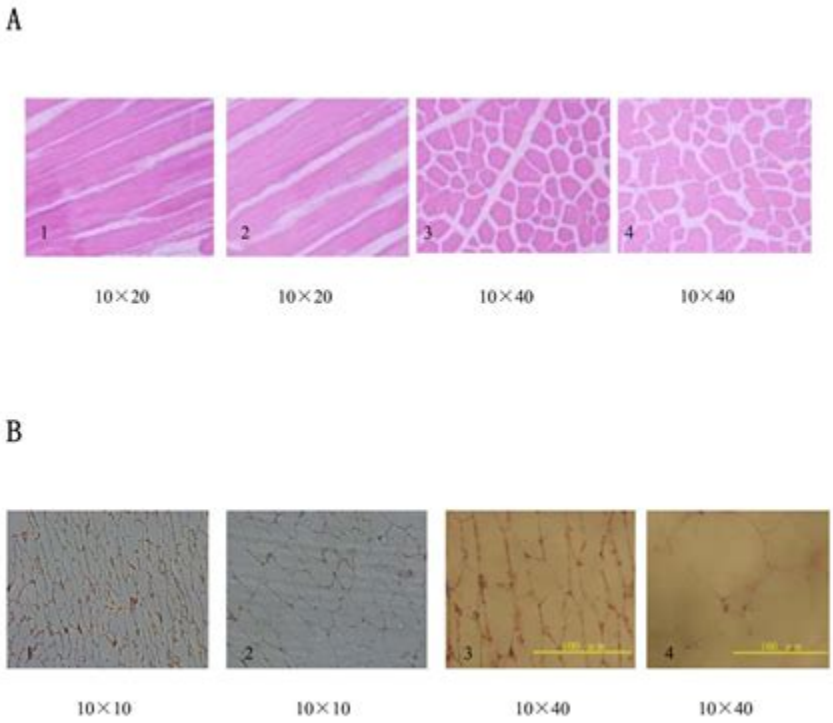
Clenbuterol is a sympathomimetic amine used by sufferers of breathing disorders as a decongestant and bronchodilator. People with chronic breathing disorders such as asthma use this as a bronchodilator to make breathing easier. It is most commonly available as the hydrochloride salt, clenbuterol hydrochloride. [2]

A LC-MS/MS method for determination of clenbuterol enantiomers in .



Clenbuterol can be used both as a clinical pharmaceutical preparation for chronic obstructive pulmonary disease [1] and as a growth promoter in animal husbandry [1], [2], [3]. Due to its anabolic effect, athletes also abuse it to improve their sports performance by increasing lean body mass unfairly [3], [4], [5].

Differential gene expression profile in pig adipose tissue treated with .



Differential gene expression profiling of fatty tissue in Clenbuterol-treated pigs has been reported [34], and several lipid metabolism-related genes, including apoD and apoR, were found in this study. Several studies have reported the metabolomics of body fluid treated with β-agonist [21], [22], [31]. Wu et al. reported two co-biomarkers .

Tainted Pork Is Latest Food Safety Scandal In China

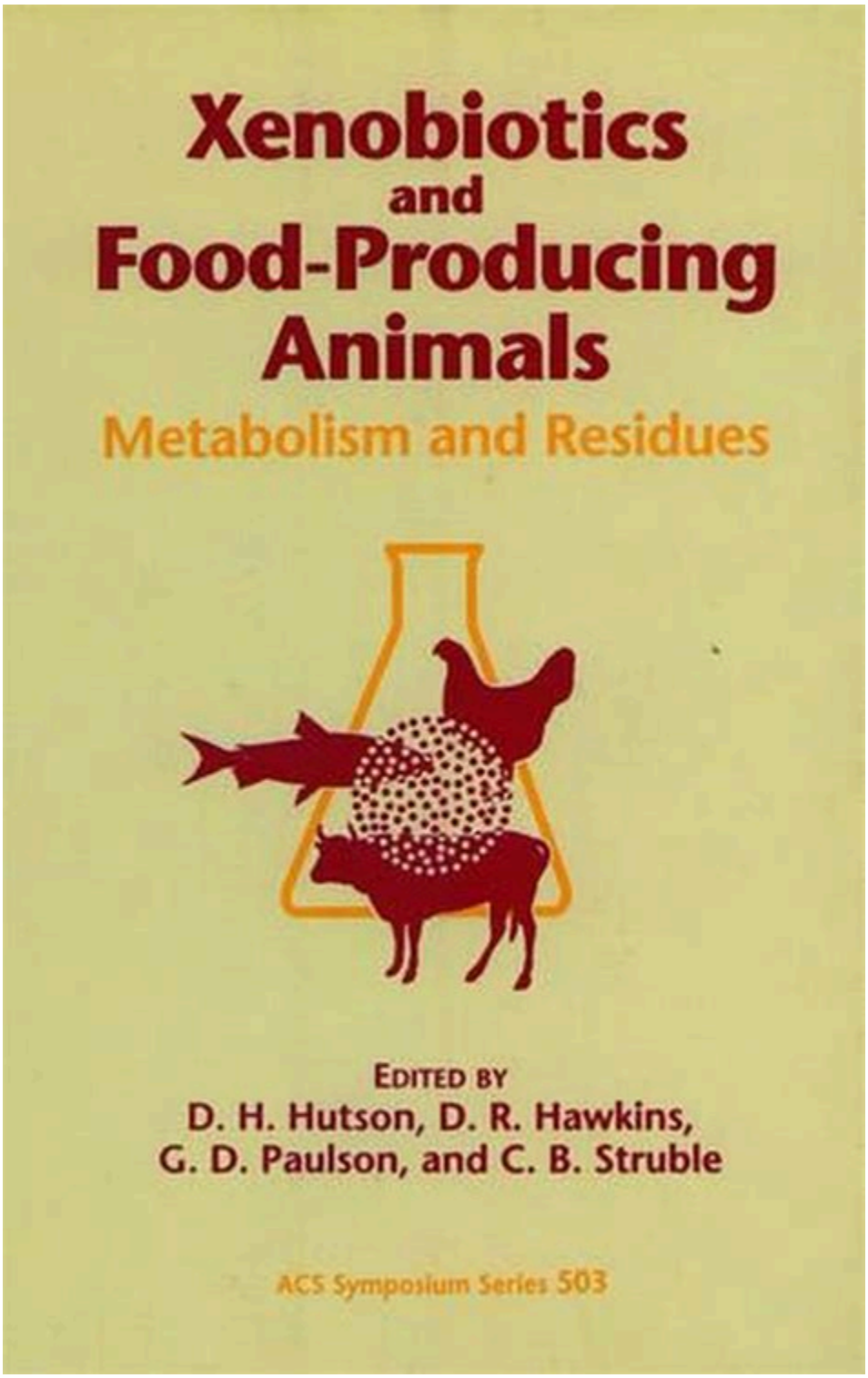
The muscle fibers of pigs become thicker when treated with clenbuterol. 1B. Subcutaneous back fat (at

the fifth lumbar vertebra level) histological section of pigs with/without the administration of clenbuterol. 1. amplified10 × 10 of test pigs. 2. amplified 10 × 10 of control pigs. 3. amplified 10 × 40 of test pigs. 4.

Clenbuterol and Meat Contamination in Anti-Doping | USADA

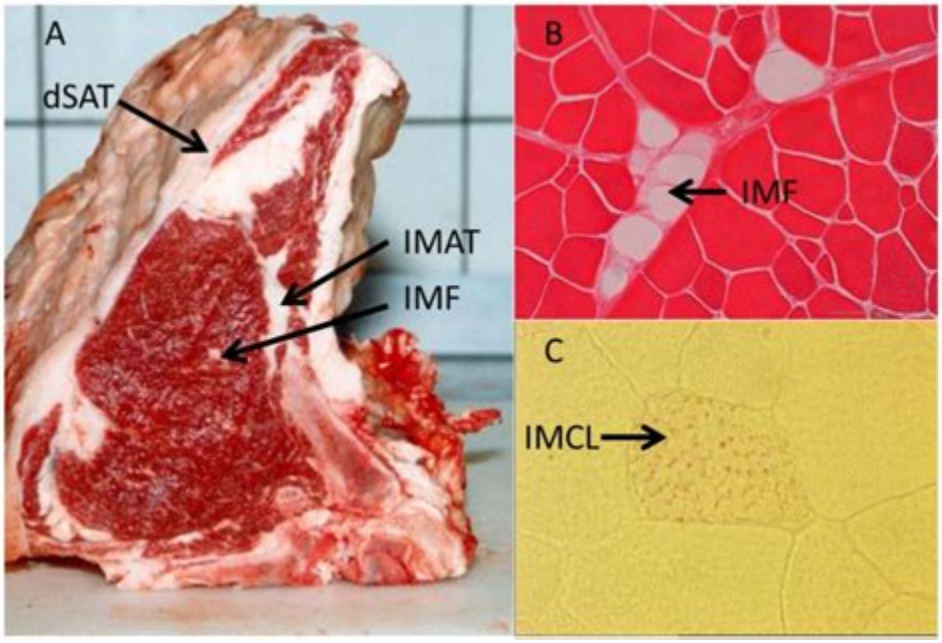
Clenbuterol, a beta-agonist, can dramatically reduce pig adipose accumulation at high dosages. However, it has been banned in pig production because people who eat pig products treated with clenbuterol can be poisoned by the clenbuterol residues. To understand the molecular mechanism for this fat reduction, cDNA microarray, real-time PCR, two-dimensional electrophoresis and mass spectra were .

Xenobiotic clenbuterol in food producing male pigs: Various tissue .



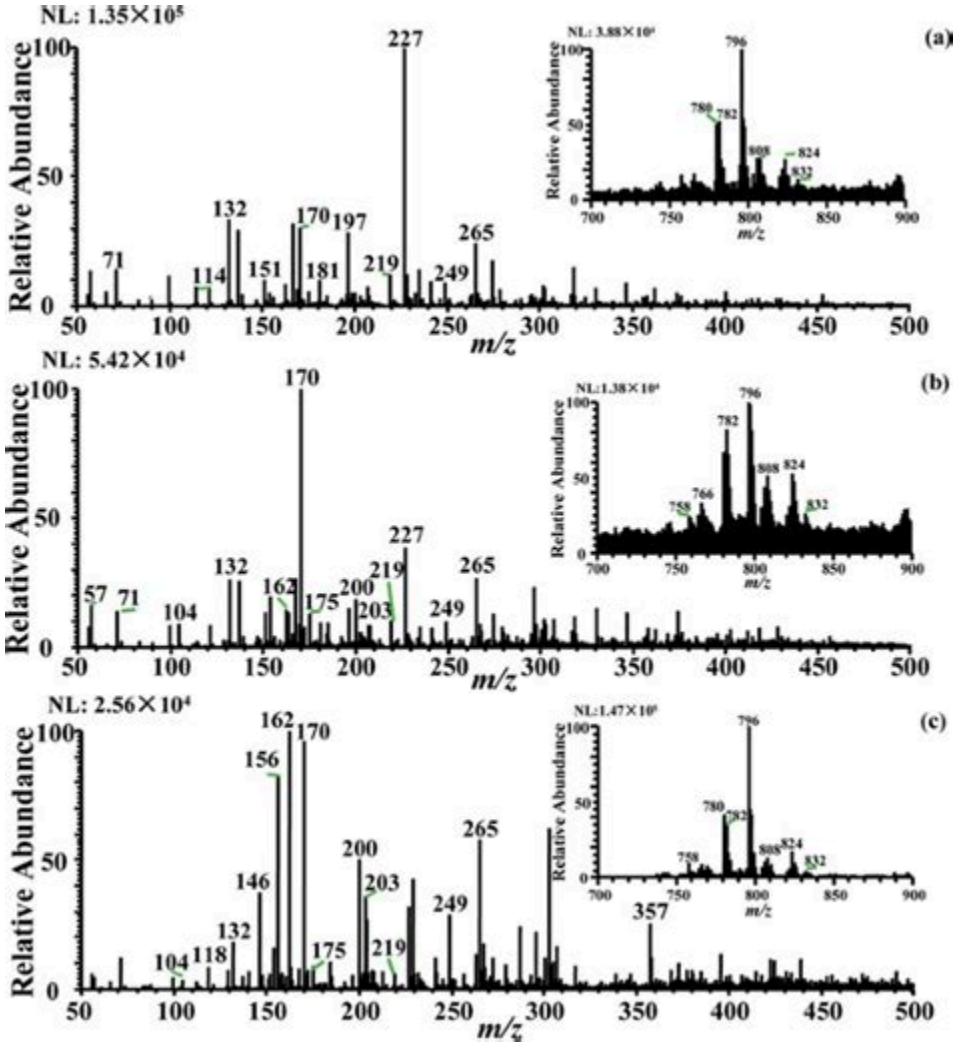
20667663 DOI: 10. 1016/jatsci. 2010. 06. 013 Abstract The aim of this study was to determine the level of clenbuterol residues in muscle tissue of pigs after repeat administration in a growth-promoting dose.

Metabolomic investigation of porcine muscle and fatty tissue after .



In this study, one pig provided one sample, a total of 18 pork samples from 18 pigs (control group including 9 normal pork samples, experimental group including 2 pork samples with clenbuterol and .

Metabolic Effects of Clenbuterol and Salbutamol on Pork Meat . - Nature



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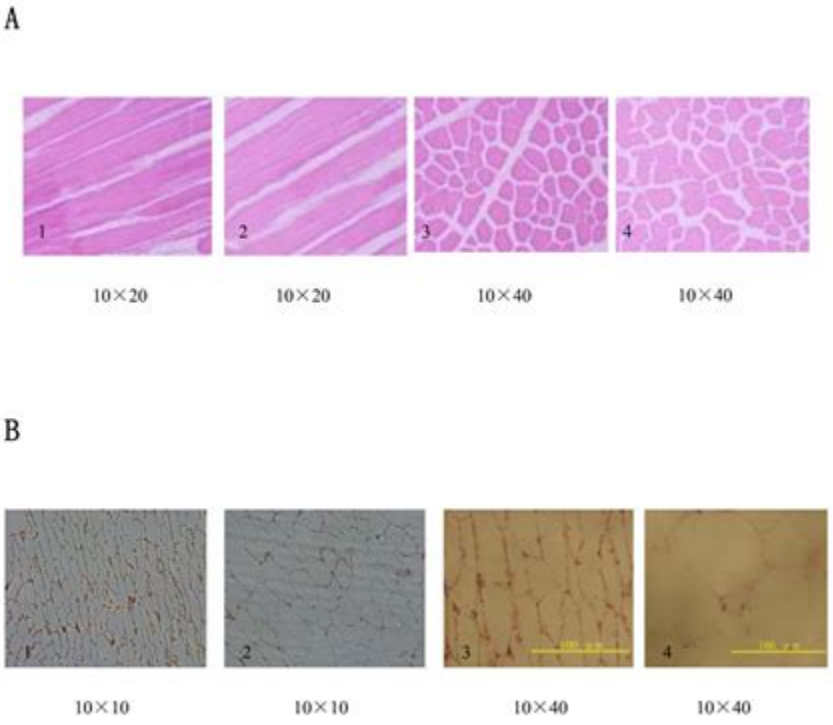
Illegal, Deadly Drug Found in US Pork Exports — Species Unite

The phenethanolamine β -adrenergic agonist clenbuterol is a xenobiotic growth promotant, demonstrated to be administered illegally as a repartitioning agent in meat producing animals in Europe (Kuiper, Noordam, van Dooren-Flipsen, Schilt, & Roos, 1998).

Differential gene expression profile in pig adipose tissue treated with .



Based on chemical properties (moisture, ash, fat and protein) and physical properties (pH, tenderness,

cooking shrinkage and welted holding capacity), the effects of clenbuterol on meat quality of growing male pig were analyzed 12.

- https://telegra.ph/Clen-T3-Results-Pics-02-06
- https://blog.libero.it/wp/nikitagusevhi/wp-content/uploads/sites/88235/2024/01/Mk-677-Stack.pdf
- https://telegra.ph/Testosterone-Acetate-Vs-Cypionate-02-09