Bound residues and nitrofuran detection

From 2000-01-01 to 2004-04-01

Project details

<table>
<thead>
<tr>
<th>Total cost:</th>
<th>Topic(s):</th>
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<tbody>
<tr>
<td>EUR 1 317 814</td>
<td>1.1.1.-1. - Key action Food, Nutrition and Health</td>
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<tr>
<td>EU contribution:</td>
<td>Funding scheme:</td>
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<tr>
<td>EUR 906 968</td>
<td>CSC - Cost-sharing contracts</td>
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</tbody>
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Coordinated in:
United Kingdom

Objective

The use of nitrofuran antibiotics in farm animals was banned in the EU because of their toxicity. Monitoring compliance with the ban by testing for residues of the parent drugs is ineffective, because they are rapidly metabolised in vivo, and their residues are unstable. Nitrofuran metabolism is complex, with extensive formation of stable, tissue-bound residues with relatively long tissue half lives. Mild acids (like the human stomach) release potentially toxic compounds from bound nitrofuran residues. This project will develop screening tests and a Reference Method for these compounds, to provide an effective tool for surveillance and enforcement. Methods will be extensively validated according to current EU guidelines; will be used to measure the prevalence of the bound residues in a pan-European survey and to define the length of time for which illegal abuse can be detected. A project web site, a Consumer Awareness Forum, National Reference Laboratory Technology Transfer events and articles prepared for the consumer press will ensure maximum dissemination of the aims and findings of the work to end users; and an SME will develop novel, marketable products.

Related information

Result In Brief
Developing methods to detect banned nitrofurans

Report Summaries
Data on pharmacokinetics of nitrofuran depletion in pigs
ELISA test kits for AOZ and AMOZ (metabolites of furazolidone and furaltadone, capable of detecting these drugs at concentrations below the EU minimum required performance limit
LC-MS/MS methods for the confirmation of nitrofuran metabolites
Stability data on nitrofurans in solution, tissue and upon cooking
Survey of nitrofuran residues in EU-purchased pork
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