

INFORMATION ON RESEARCH RESULTS

1. General Information

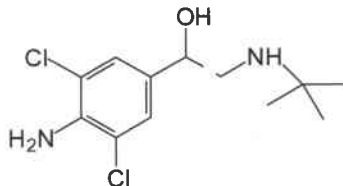
- Project Title: *Analysis of Clenbuterol in feedstuff and meat product by Liquid Chromatography – Mass Spectrometry – Mass Spectrometry (LC/MS/MS)*
- Code number: **B2008- 16 - 107**
- Coordinator: **NGUYỄN THỊ THU THỦY**
- Implementing Institution: Chemistry department – School of Education - CanTho University
- Duration: from April - 2008 to April - 2010

2. Objectives:

- To develop and validate a LC/MS/MS method for analyzing clenbuterol in feedstuff and meat
- To confirm Clenbuterol residues in chicken
- To investigate the use of Clenbuterol in feedstuff, pork and chicken in some provinces of the Mekong Delta (The Southern Vietnam)

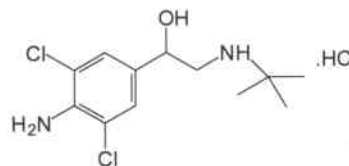
3. Creativeness and innovativeness

- Confirmation and quantitative determination of Clenbuterol in feedstuff and meat by LC/MS/MS
- + The chemical formula of Clenbuterol and Clenbuterol Hydrochloride



Clenbuterol ($C_{12}H_{18}Cl_2N_2O$)-
 $C_{12}H_{19}Cl_3N_2O$ -

Mw: 277.2 (g/M)



Clenbuterol Hydrochloride

Mw: 313,7 (g/M)

- Testing for residues of Clenbuterol in chicken
- Investigating the use of Clenbuterol in feedstuff, pork and chicken in some provinces of the Mekong Delta (Southern Vietnam)

4. Results obtained:

- A protocol for Clenbuterol analysis in feedstuff and meat by LC/MS/MS was established with LOD \approx 0.017 ng/g (ppb) for meat, LOD \approx 0,12 ng/g (ppb) for feedstuff, well below the EU MRL value of 0,2 ppb (ng/g) in meat. Recovery values of 75-80%, complied with EU regulations. The method was implemented for routine assay of clenbuterol in some provinces of Mekong Delta (The Southern Vietnam)
- Percentage of contaminated meat samples 25-30%

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- Analytical data were reported for 200 feedstuff samples and 1000 pork and chicken meat samples in some provinces of the Mekong Delta: Cantho City, Haugiang Province, Vinh Long Province).

5. Products

- A protocol for Clenbuterol analysis by LC-MS/MS
- An Article (*Journal of Science and Technology* - Vietnamese academy of science and Technology)

Coordinator
Nguyễn Thị Thu Thủy

