



Cairo University
Faculty of Veterinary Medicine
Department of Pharmacology

**Pharmacokinetic Behaviour of Marbofloxacin in Normal
and *Mycoplasma gallisepticum* Infected Chickens**

Thesis Submitted By

Hend Fouad Mohamed El Stuhy

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M.V.Sc.(Pharmacology)

Under Supervision of

Prof.Dr.Mohamed Atef Shehata

Professor of Pharmacology
Faculty of Veterinary Medicine
Cairo University

Prof.Dr.Attia Hassan Atta

Professor of Pharmacology
Faculty of Veterinary Medicine
Cairo University

Dr. Ashraf Shehata Darwish

Senior Researcher of Pharmacology
Animal Health Research Institute, Dokki

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Supervision sheet

Supervisors

Prof.Dr. Mohamed Atef Shehata

Professor of pharmacology

Faculty of Veterinary Medicine

Cairo University

Prof. Dr. Attia Hassan Atta

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Faculty of Veterinary Medicine

Cairo University

Dr. Ashraf Shehata Darwish

Senior Researcher of pharmacology

Animal Health Research Institute, Dokki

Cairo University
Faculty of Veterinary Medicine
Department of Pharmacology

Name: Hend Fouad Mohamed

Nationality: Egyptian

Date of Birth: 17-8-1989

Place of birth: Egypt

Degree: Master Degree

Specialization: Veterinary Pharmacology

Title of the thesis: Pharmacokinetics Behaviour of Marbofloxacin in
Normal and *Mycoplasma gallisepticum* Infected Chickens .

Supervisors:

Prof. Dr. Mohamed Atef Shehata

Prof. Dr. Attia Hassan Atta

Dr. Ashraf Shehata Darwish

ABSTRACT

The pharmacokinetics of marbofloxacin in normal and *Mycoplasma gallisepticum* experimentally infected broiler chickens was investigated after I.V. and oral administrations at a dose of 5 mg/kg.b.wt. Moreover, tissue residues in normal chickens after successive daily oral administration were also investigated. Plasma concentrations and tissue residues of marbofloxacin were determined by using high-performance liquid chromatography. The results showed that plasma concentrations were significantly higher in normal than in infected chickens following intravenous and oral administration. Marbofloxacin was eliminated after intravenous injection with half life ($t_{1/2\beta}$) of 6.8 ± 0.34 h in normal which significantly longer than 5.66 ± 0.33 in infected. The mean residence time was 9.67 ± 0.5 h in normal vs 8.03 ± 0.45 h in infected chickens. After oral administration the drug reached its maximum plasma concentrations (c_{\max}) of 1.37 ± 0.08 $\mu\text{g/ml}$ at maximum time (t_{\max}) of 1.95 ± 0.04 h in normal, while in diseased chickens the c_{\max} 0.95 ± 0.02 $\mu\text{g/ml}$ attained at t_{\max} of 2.08 ± 0.05 h in diseased chickens. Following repeated oral administration of marbofloxacin at adose of 5 mg /kg.b.wt once daily for 3 consecutive days, marbofloxacin was detected after 24 h of the last dose at mean concentration of 1.52, 1.74, 0.17, 0.13 and 0.18 $\mu\text{g/gm}$ at in liver, kidney, breast muscle , thigh muscle and gizzard respectively. Marbofloxacin dissapeared from breast muscle, thigh muscle and gizzard at day 3, while in liver and kidney it persisted till the 5th day following last oral dose. In conclusion a marbofloxacin at dose of 5 mg/kg administered intravenously or orally at 24 h intervals may provide successful treatment of chicken infected with *Mycoplasma gallisepticum*. Based on the tissue concentration a 4 days withdrawal time is suggested.

Key words: Marbofloxacin – Pharmacokinetics – *M. gallisepticum* - HPLC – chickens.

Dedicated to

My parents

My husband

My daughter

Who

Shared the responsibility of bringing me up to be grateful

and

To all those who taught me

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