



## Comparative bioavailability of different formulations of florfenicol oral solution marketed in Iran

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### Abstract

Florfenicol is a broad-spectrum, primarily bacteriostatic antibiotic with a range of activity similar to that of chloramphenicol, including many gram-negative and gram-positive organisms; however, florfenicol does not carry the risk of including human aplastic anemia that is associated with chloramfenicol. Florfenicol has been demonstrated to be active *in vitro* and *in vivo* against *Mannheimia* (*Pasteurella*) *haemolytica*, *Pasteurella multocida* and *Haemophilus somnus*.

Different brands of florfenicol are marketed in Iran and it is believed that the differences in product formulation may affect the therapeutic response by altering relative bioavailability of the commercial formulation. Therefore the present study was carried out to study the bioavailability of different oral solution of florfenicol formulated in Iranian companies [Florgen10% (Laluk) - Fenilfloral 10% (A.T.D Darusazan Iran)] in comparison of Noflor 10% (Schering plough).

30 healthy layer chickens 413- 429 days old weighted  $2.2 \pm 0.048$  kg were included in this study and they separated in two equal groups (A and B). 30 mg/ml of either product was orally administrated in random crossover manner to each animal in three different days with wash out period of two weeks.

Blood samples (1 ml) were taken from radial vein in heparinized tubes at 0, 0.25, 0.45, 1.5, 3 and 6hr in group A and 0, 0.5, 1, 2, 4 and 8hr post – drug administration in group B.

The concentrations of felorfenicol in plasma were determined by an HPLC method.

The standard kinetic parameters  $C_{max}$ ,  $T_{max}$  and area under the concentration curve (AUC) were calculated and compared (ANOVA) using computer program and listed in the following table.

	Noflor 10%	Fenilfloral 10%	Florgen 10%
$C_{max}$ (µg/ml)	$12.92 \pm 0.91$	$11.6 \pm 0.72$	$13.06 \pm 0.76$
$T_{max}$ (hr.)	$1.00 \pm 0.09$	$0.86 \pm 0.08$	$1.06 \pm 0.13$
AUC <sub>(0-6)</sub> (µg.hr/ml)	$31.14 \pm 2.84$	$31.23 \pm 1.96$	$31.64 \pm 2.22$
AUC <sub>(0-8)</sub> (µg.hr/ml)	$39.654 \pm 3.73$	$41.76 \pm 3.21$	$41.93 \pm 3.61$

No statistically significant difference was found between different formulations.

Our data indicates that the bioavailability of florfenicol is similar in different formulation used in this study therefore they are interchangeable.

**Keyword:** Florfenicol, Bioavailability, Pharmacokinetic, HPLC.