https://doi.org/10.5878/905y-hq69	**Test items:** - Amoxibactin 50 mg - Trymox LA 150 mg/mL - Amoxicilline PANPHARMA 1 g	**Active substance:** Amoxicillin

Title of the study:
Plasmaconcentration-time data of amoxicillin in cats

Time schedule of the animal phase

• Inclusion period	10 MAY 23 to 30 MAY 23
• Oral administration	31 MAY 23 to 02 JUN 23
• Subcutaneous administration	13 JUN 23 to 16 JUN 23
• Intravenous administration	28 JUN 23 and 12 JUL 23

Objective:
The objective of this study was to obtain pharmacokinetic data of amoxicillin in cats

Animals:

Species	Cat (*Felis catus*)
Breed	European
Number	6
Sex	2 males and 4 females, all neutered
Age	2 years
Weight	4-6 kg
Identification	The animals were identified by a name and by a microchip. For the CRFs and raw data, the name were used.
Supplier	Marshall BioResources
Justification of the species	Target species

All the cats were considered healthy based on full clinical examinations performed by a veterinarian and on biochemical and hematological analyses. No animal was removed from the study.

Test items:

Name:	**Amoxibactin 50 mg**
Active ingredient:	Amoxicillin (trihydrate) _____ 50 mg
Formulation:	Tablet
Batch number:	22E09
Expiry date:	31 MAY 25
Source manufacturer:	Dechra Veterinary Products
Storage conditions:	<30°C
Stability:	Any unused portion of tablet should be returned to the opened blister and used within 4 days
Name:	**Trymox LA 150 mg/mL**
Active ingredient:	Amoxicillin (trihydrate) _____ 150 mg
Formulation:	Suspension
Batch number:	N061
Expiry date:	31 JAN 25
Source manufacturer:	Huvepharma
Storage conditions:	<25°C
Stability:	28 days after opening
Name:	**Amoxicilline PANPHARMA 1 g**
Active ingredient:	Amoxicillin (sodium) _____ 1 g
Formulation:	Powder

Batch number:	308089
Expiry date:	NOV 2025
Source manufacturer:	Panpharma
Storage conditions:	<25°C before and after reconstitution with water for injection
Stability:	6h after reconstitution with water for injection (20 mL)

Experimental design (animal phase):

The 6 cats received sequentially:

- an oral bolus of Amoxibactin at 10 mg/kg bodyweight (BW),
- a subcutaneous bolus of Trymox LA at 15 mg/kg BW,
- an intravenous bolus of Amoxicilline PANPHARMA at 10 mg/kg BW.

Washout between the last sampling after oral administration and the sampling before subcutaneous administration was 10 days.

Washout between the last sampling after subcutaneous administration and the sampling before intravenous administration was 12 days.

Blood samples for determination of amoxicillin plasma concentrations were collected:

- before administration, and 15', 30', 1h, 2h, 3h, 5h30, 7h, 9h, 12h and 24h after oral administration,
- before administration, and 15', 30', 1h, 2h, 3h, 5h30, 7h, 10h, 24h, 34h and 48h after subcutaneous administration,
- before administration, and 5', 10', 40', 1h30, 3h, 5h, 7h, 9h and 11h after intravenous administration.

Determination of amoxicillin concentrations in plasma:

Plasma amoxicillin concentrations were determined by UHPLC/MS-MS.

The method was validated with a calibration curve ranging from 0.01 to 10 µg/mL and three QC samples (0.025, 0.75 and 7.5 µg/mL).

Plasma samples with a concentration above 10 µg/mL were diluted to 1/10.

Amoxicillin plasma protein binding:

Amoxicillin plasma protein binding was determined with 100 µL of plasma using Thermo Scientific™ Rapid Equilibrium Dialysis (RED) inserts and plates (Fisher Scientific, Illkirch, France).

To determine amoxicillin unbound fraction, one sample per cat and per administration route as closed as possible to the maximal plasma concentration was used.