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## Determination of intracellular (neutrophil and monocyte) concentrations of free and liposome encapsulated ampicillin in sheep

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<https://doi.org/10.17221/5517-VETMED>

Citation: Yazar E., AL B., YO B., Yapar K., Elmas M., Tras B. (2006): Determination of intracellular (neutrophil and monocyte) concentrations of free and liposome encapsulated ampicillin in sheep. Veterinarní Medicína, 51: 51-54.

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In the current study, intracellular (neutrophil and monocyte) concentrations of free and liposome encapsulated ampicillin in sheep were investigated. Free ampicillin (5 mg/kg b.w.) and liposome encapsulated ampicillin (5 mg/kg b.w.) were administered as a bolus intravenous injection to sheep. After the injections, blood samples (5 ml) were collected into tubes from v. jugularis at 10, 30, 60 minutes and 2, 4 and 8 hours. Neutrophils and monocytes were isolated, and lysed in distilled water. Ampicillin concentrations were measured by high performance liquid chromatography. The results indicate that liposome encapsulated ampicillin caused the higher intracellular concentrations within neutrophil (ratio of liposome encapsulated ampicillin/free ampicillin; from 1.393 to 5.416) and monocyte (ratio of liposome encapsulated ampicillin/free ampicillin; from 0.973 to 2.906) cells than free ampicillin, and liposome encapsulated ampicillin existed a longer length of time within neutrophil (4 hours) and monocyte (4 hours) cells than free ampicillin (60 minutes), as well. This formulation may be beneficial, in that the treatment of intracellular infections are caused by sensitive bacteria.

**Keywords:**

ampicillin; liposome; neutrophil; monocyte; intracellular concentrations

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Impact factor (WoS)

2016: 0.434

5-Year Impact Factor: 0.7

SJR (SCOPUS)

2017: 0.280 – Q2 (Veterina (miscellaneous))

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