

## Accuracy of a Species and Cuff Site Optimized Oscillometric BP Monitor in Dogs

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petMAP is a new device for the indirect measurement of BP in dogs and cats using the oscillometric technique. The petMAP's small size makes it uniquely versatile providing data that has been individually optimized for both dogs and cats, and cuff site (forelimb, tail, and hindlimb). petMAP was tested in lightly anesthetized dogs (N=10) by comparing cuff readings at all three locations to simultaneously recorded intra-arterial pressure measurements. The mean and standard deviations of the differences between the two methods for systolic (SAP), mean (MAP), and diastolic (DAP) arterial pressure were analyzed and displayed as Bland-Altman and correlation plots. The best agreement was achieved on the tail. The mean and standard deviations in mmHg for the differences in SAP, MAP, and DAP were, respectively,  $-1.64 \pm 11.9$ ,  $-6.16 \pm 8.2$ ,  $-6.1 \pm 7.7$  (a negative mean value is underestimation of arterial pressure by the petMAP compared to intra-arterial readings). petMAP results compared favorably with: 1) the results reported for the Cardell oscillometric blood pressure monitor in anesthetized dogs (N=6) metatarsus (best site, sign of mean reversed for consistency):  $-7 \pm 11$ ,  $-11 \pm 6$ ,  $-13 \pm 6$  [Ref 1], 2) with the Dinamap oscillometric blood pressure monitor on awake dogs (N=12) tail (best site, sign of mean reversed for consistency):  $-20.0 \pm 18.2$ ,  $-10.80 \pm 15.6$ ,  $-5.3 \pm 15.3$  [Ref 2], and 3) the Doppler (N=12) ultrasonic blood pressure monitor on the metatarsus (best site, sign of mean reversed for consistency, systolic only):  $-11.6 \pm 19.7$  [Ref 2]. Our data suggests that the petMAP offers improved accuracy of BP measurement in dogs compared to other popular oscillometric and Doppler devices.

1. Sawyer, et al, *Veterinary Anesthesia and Analgesia*, 2004; 31:27-39.
2. Haberman, et al, *Can J Vet Res*, 2006; 70:211-217.