

## Bone marker – Reference values in animals

### BAP in Dogs

Serum / Plasma:	< 1 year	56.3 ± 9.8 U/L
	1 – 2 years	10.7 ± 4.5 U/L
	2 – 3 years	7.0 ± 2.5 U/L
	3 – 7 years	6.7 ± 3.6 U/L
	> 8 years	7.0 ± 2.9 U/L

Reference: Allen LC *et al.* (2000) A comparison of two techniques for the determination of serum bone-specific alkaline phosphatase activity in dogs. *Res Vet Sci* 68, 231-235.

### BAP in Cats

Serum:	< 2 years	10 – 70 U/L
	> 2 years	2 – 15 U/L

Reference: DeLaurier A, Jackson B, Ingham K, Pfeiffer D, Horton MA, Price JS. (2002) Biochemical markers of bone turnover in the domestic cat: relationships with age and feline osteoclastic resorptive lesions. *J Nutr* 132, 1742S-4S.

### BAP in Horses

Serum:	12.2 – 25.5 U/L
Plasma:	12.6 – 22.7 U/L

Reference: Hoekstra K *et al.* (1999) Comparison of bone mineral content and biochemical markers of bone metabolism in stall vs. pasture-reared horses. *Equine Exercise Phys Equine Vet J* 30, 601-604.

### BAP in goats

Serum:	12 ± 4 U/L
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Reference: Liesegang A, Risteli J, Wanner M (2005) The effects of first gestation and lactation on bone metabolism in dairy goats and milk sheep. *Bone*. Dec 16; 2008

### BAP in sheep

Serum:	13 ± 4 U/L
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Reference: Liesegang A, Risteli J, Wanner M (2005) The effects of first gestation and lactation on bone metabolism in dairy goats and milk sheep. *Bone*. Dec 16; 2008

### BAP in porcine

Reference: Liesegang A *et al.* (2002) Influence of a Vegetarian Diet Versus a Diet with Fishmeal on Bone in Growing Pigs. *J. Vet. Med. A* 49, 230-238

### DPD in Dogs

Urine:	< 1 year	45 nM/mM Creatinine
	1 – 2 years	4 – 5 nM/mM Creatinine
	2 – 3 years	4 – 5 nM/mM Creatinine
	3 – 7 years	4 – 5 nM/mM Creatinine

Reference: Allen MJ *et al.* (2000) Urinary markers of type-I collagen degradation in the dog. *Res Vet Sci* 69, 123-127.

## DPD in Cats

Urine: 1 – 10 years 11.3 nM/mM Creatinine

Reference: DeLaurier A, Jackson B, Ingham K, Pfeiffer D, Horton MA, Price JS. (2002) Biochemical markers of bone turnover in the domestic cat: relationships with age and feline osteoclastic resorptive lesions. J Nutr 132, 1742-1744.

## DPD in Horses

Urine: 6.0 – 95 nM/mM Creatinine

Reference: Hoekstra K *et al.* (1999) Comparison of bone mineral content and biochemical markers of bone metabolism in stall vs. pasture-reared horses. Equine Exercise Phys Equine Vet J 30, 601-604.

## Osteocalcin intact in Horses

Serum: 15 – 50 ng/ml

Reference: Hoekstra K *et al.* (1999) Comparison of bone mineral content and biochemical markers of bone metabolism in stall vs. pasture-reared horses. Equine Exercise Phys Equine Vet J 30, 601-604.

## Creatinine for animal species

Reference: Sierra RI, Specker BL, Jimenez F, Cruz C, Pedraza-Chaverri J (1997) Biochemical bone markers, bone mineral content, and bone mineral density in rats with experimental nephrotic syndrome. Ren Fail 19, 409-424.

## PTH in Dogs

Serum / Plasma: 15 – 150 pg/ml

## PTH in Cats

Serum / Plasma: 3.3 – 22.5 pg/ml

## PTH in Horses

Serum / Plasma: 20 – 120 pg/ml, mean 56 pg/ml