i-STAT® Alinity v

DEMONSTRATED STRONG PERFORMANCE
IN THE VETERINARY CLINICAL SETTING

IN A PROSPECTIVE HEAD-TO-HEAD STUDY, the precision and correlation of the i-STAT® Alinity v were assessed in comparison with 2 commonly used and previously validated point-of-care analyzers: i-STAT 1 and Stat Profile® pHOx® Ultra (Nova Biomedical®).[1]

WHAT ARE PRECISION AND CORRELATION?

PRECISION: How consistent results are when measurements are repeated.

CORRELATION: A statistical measure of accuracy that expresses the extent to which two variables are linearly related (meaning they change together at a constant rate).

	Accuracy	Precision
	↑	↓
	↓	↑
	↑	↑

PRECISION STUDY

PRECISION analysis was run on four i-STAT Alinity v analyzers over 20 day period, randomly selecting 2 analyzers and 1 cartridge type per day. Cartridge type and analyzers were alternated each day.

WHAT WAS TESTED[1]

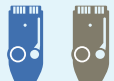**TESTED AT:** UGA — University of Georgia Veterinary Medical Center

HEPARINIZED WHOLE BLOOD SAMPLES

CANINES x20
(70 individual samples)

FELINES x8
(36 individual samples)

EQUINES x5
(28 individual samples)

CG4+   CHEM8+

Species were combined for analyses of the precision data

PRECISION STUDY RESULTS[1]

The study demonstrated **VERY GOOD PRECISION AND REPRODUCIBILITY** across four different **i-STAT ALINITY v** analyzers.[1]

NO CV >7%*

MOST ANALYTES MEDIAN CV <2.5%*[†]

ALMOST ALL ANALYTES for 25% and 75% quartiles **HAD CV <10%.**

ANALYZER ACCURACY AND COMPARISON

CORRELATION between analyzers was evaluated by comparing whole blood concurrently run on all three analyzers from dogs, cats, and horses presented for emergent evaluation.

i-STAT 1

Stat Profile pHOx Ultra

i-STAT Alinity v

WHAT WAS TESTED[1]

TESTED AT: UGA — University of Georgia Veterinary Medical Center

HEPARINIZED WHOLE BLOOD SAMPLES

CANINES x54

FELINES x22

EQUINES x7

Samples were run within 5 minutes of collection, and analyses started on each analyzer within 15 seconds of each other.
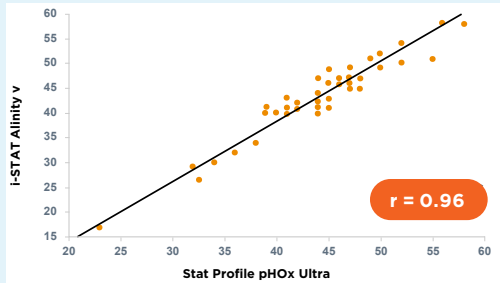
The study demonstrated **GOOD TO EXCELLENT CORRELATIONS** for most canine, feline, and equine analytes vs. the Stat Profile pHOx Ultra
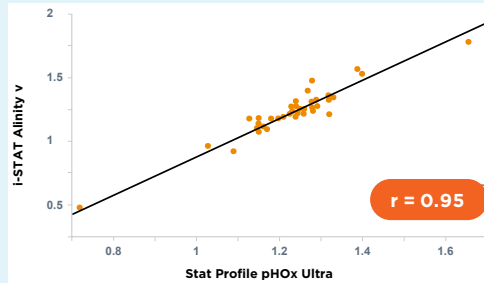
CLINICAL CORRELATION: CANINE[1]

Selected pearson correlation plots comparing the i-STAT Alinity v and the Stat Profile pHOx Ultra

Hematocrit (HCT %)

r = 0.96

HCT Hematocrit

Ionized calcium (iCa mmol/L)

r = 0.95

iCa Ionized calcium
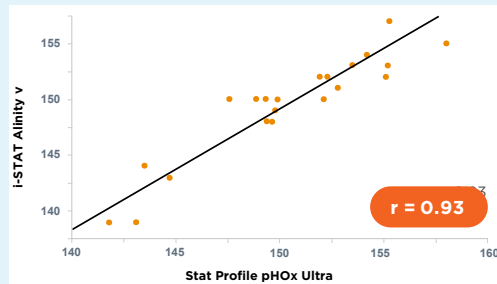
CLINICAL CORRELATION: FELINE[1]

Selected pearson correlation plots comparing the i-STAT Alinity v and the Stat Profile pHOx Ultra

Creatinine (CRE mg/dL)

r = 0.99
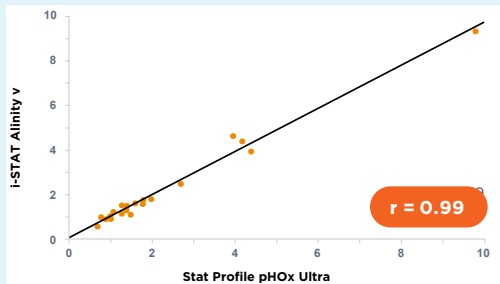
CRE Creatinine

Sodium (Na+ mmol/L)

r = 0.93

Na+ Sodium

CLINICAL CORRELATION SCALE (r)

- 🙂 Fair 0.91–0.929
- 🙂 Good 0.93–0.949
- 🙂 Very good 0.95–0.969
- 😀 Excellent ≥0.97

ACCEPTABLE BIAS[1]

In general, the bias between the i-STAT Alinity v and the Stat Profile pHOx Ultra was minimal‡

i-STAT Alinity v FEATURES & BENEFITS

- 🎯 Accurate and reliable
- 💧 Small whole blood sample size (95 µL)
- ➡️ Portable and lightweight
- 👆 Easy to use
- ⚙️ Minimal maintenance
- 💡 Uses rechargeable batteries

SUMMARY[1]

- The i-STAT Alinity v demonstrated good to excellent correlations with small, clinically acceptable biases when compared to the Stat Profile pHOx Ultra in both dogs and cats.
- The i-STAT 1 (2011) and i-STAT Alinity v (2016) had excellent correlations for all variables demonstrating equivalent performance between the two analyzers.
- Within-device precision was clinically acceptable, with the median CV for most analytes ≤2.5%.*
- Due to inherent bias between different instruments, serial monitoring of clinical patients should involve the same instrument.

REQUEST A DEMO OF THE i-STAT Alinity v TODAY

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*Coefficient of Variation or CV is a percentage calculation of the mean/standard deviation that measures precision (the closeness) of agreement between results obtained using the same methodology under the same conditions. Recommended CV% vary by analyte. Performance in accordance with the American Society of Veterinary Clinical Pathology (ASVCP) and Clinical Laboratory Standards Institute (CLSI).

†Only Anion Gap had a median CV% >2.5%, at 6.28%.

‡The i-STAT Alinity v had a positive bias (read higher) for glucose concentration compared to the Stat Profile pHOx Ultra in total, but at lower individual values (<3.33 mmol/L [60 mg/dL]) the bias approached zero (i.e., the two analyzers were more similar at lower values).

REFERENCES

1. Burke JE. *et al.*. Evaluation of the i-STAT Alinity v in a veterinary clinical setting. *JVDI*. 2021; Volume: 33 issue: 4, page(s): 703-710.
   DOI: https://doi.org/10.1177/10406387211019710

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