

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).



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 TESTED¹

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

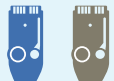
HEPARINIZED
WHOLE BLOOD
SAMPLES



CANINES x20
(70 individual samples)



FELINES x8
(36 individual samples)



CG4+ CHEM8+



EQUINES x5
(28 individual samples)

Species were combined for analyses of the precision data

PRECISION STUDY RESULTS¹



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 TESTED¹

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.

ACCURACY STUDY RESULTS¹

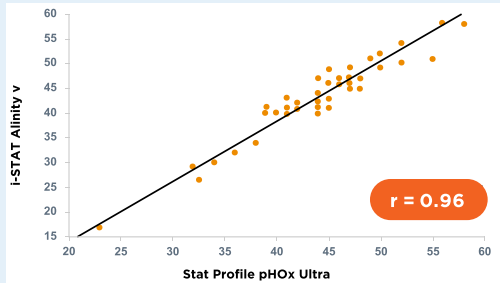


The study demonstrated **GOOD TO EXCELLENT CORRELATIONS** for most canine, feline, and equine analytes vs. the Stat Profile pHox Ultra

CLINICAL CORRELATION: CANINE¹

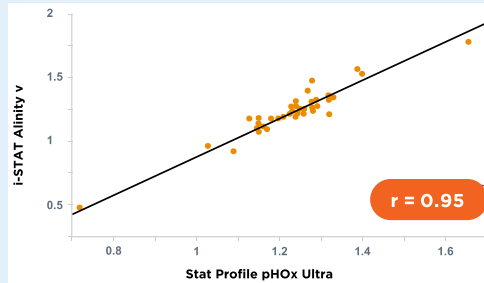
Selected Pearson correlation plots comparing the i-STAT Alinity v and the Stat Profile pHox Ultra

Hematocrit (HCT %)



HCT Hematocrit

Ionized calcium (iCa mmol/L)



iCa Ionized calcium

CLINICAL CORRELATION SCALE (r)

☹ Fair
0.91-0.929

😊 Good
0.93-0.949

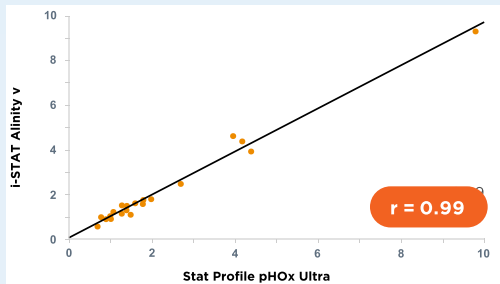
😊 Very good
0.95-0.969

😊 Excellent
≥0.97

CLINICAL CORRELATION: FELINE¹

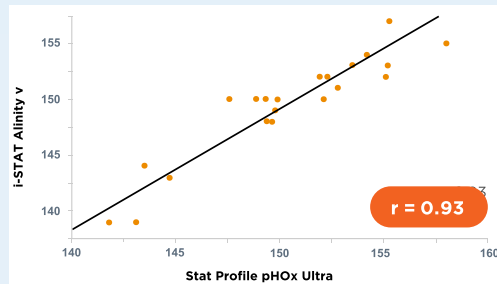
Selected Pearson correlation plots comparing the i-STAT Alinity v and the Stat Profile pHox Ultra

Creatinine (CRE mg/dL)



CRE Creatinine

Sodium (Na⁺ mmol/L)



Na⁺ Sodium

ACCEPTABLE BIAS¹

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



SUMMARY¹

- 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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