

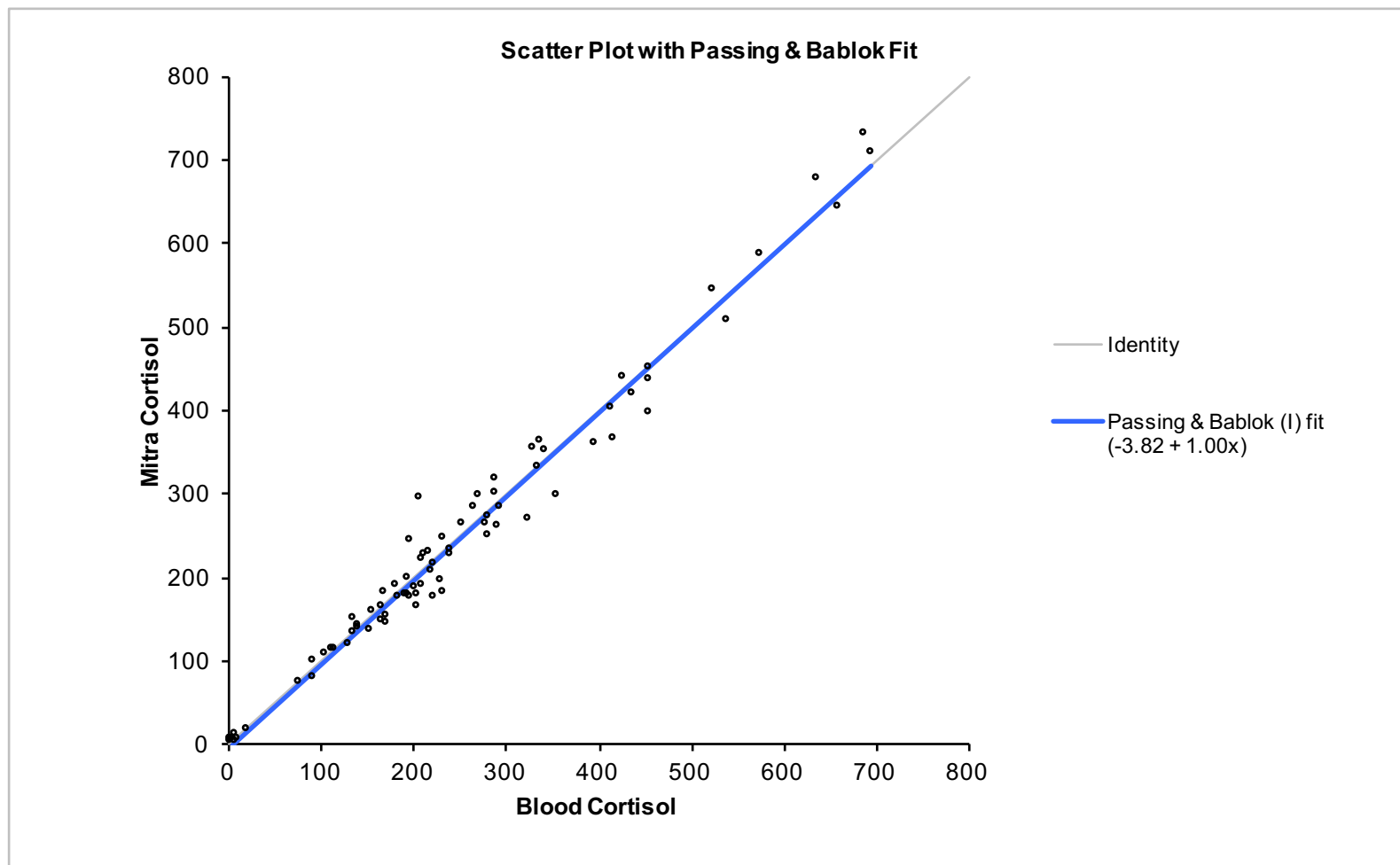
Measurement of steroids on blood collected by the Mitra device

Brian Keevil (UK)

Mitra Steroids

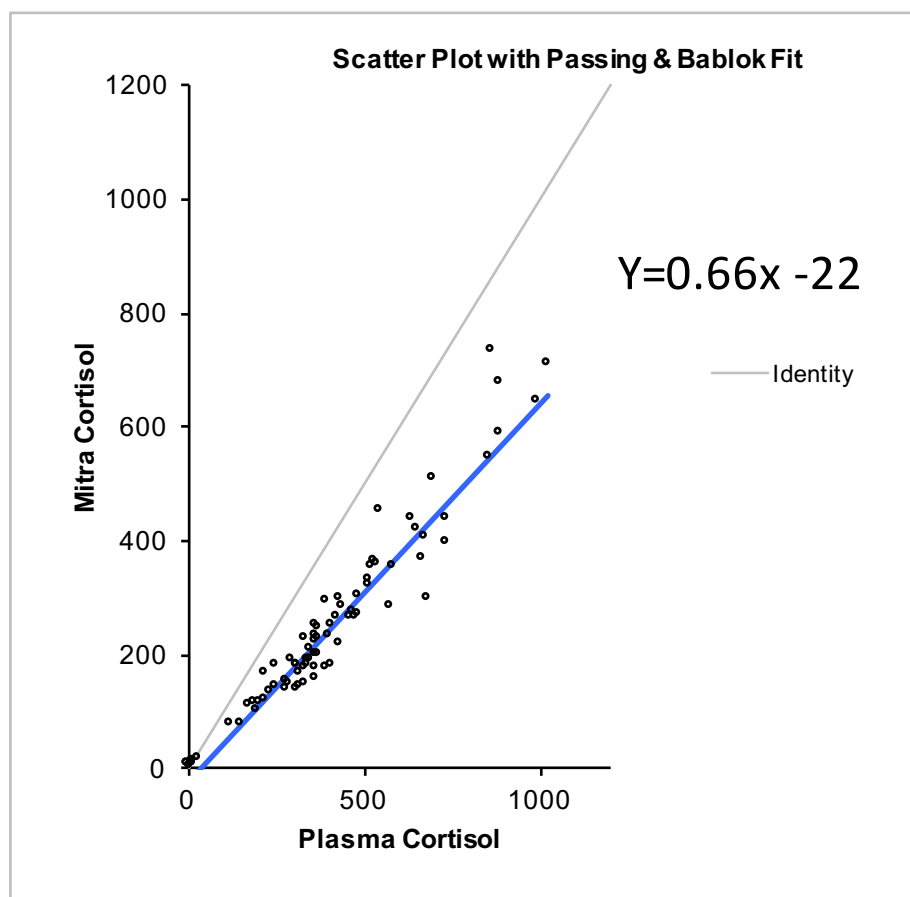
- Mitra Tip + 100uL water
- Vortex 1 minute
- Add 10uL int std
- Add 1 mL MTBE
- Mix for 1 minute
- Transfer, blow down
- Reconstitute 100uL 50% MeOH
- Matrix effect 2.6%
- Recovery 103%
- Linearity 0.999 (42 nmmol/L)
- Intra-assay CV 4%
- Inter-assay CV 6%
- Stability

Whole blood cortisol vs EDTA Mitra cortisol (n=79)

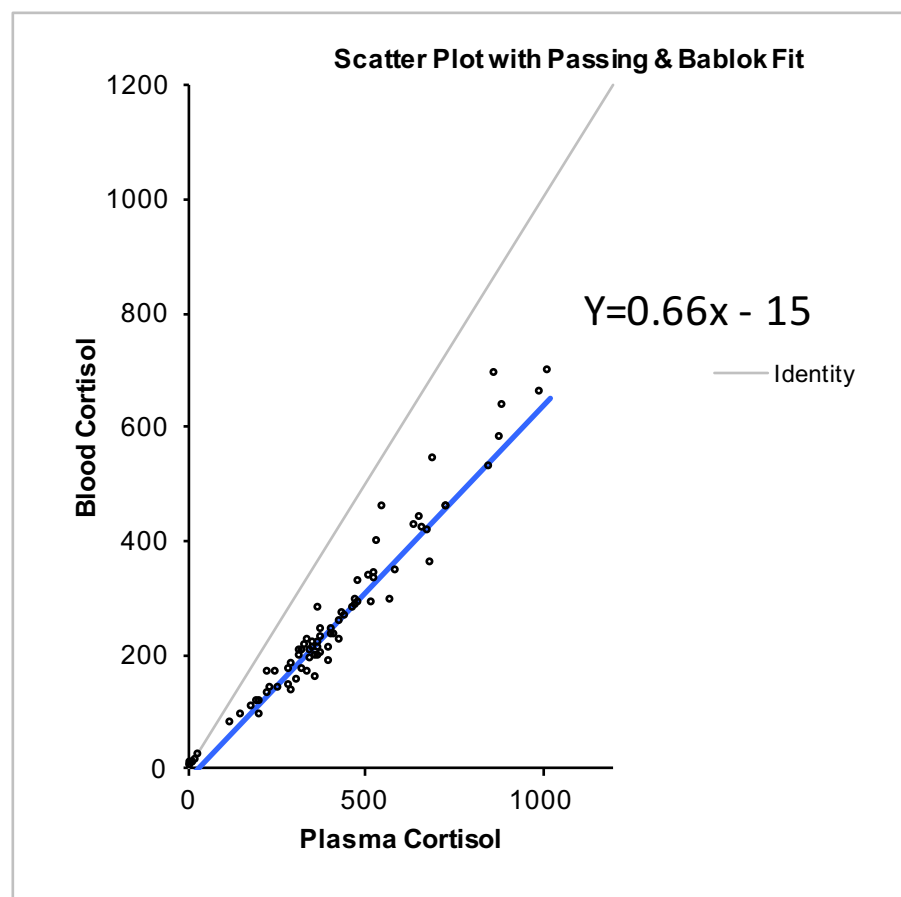


Plasma vs EDTA blood cortisol (n=79)

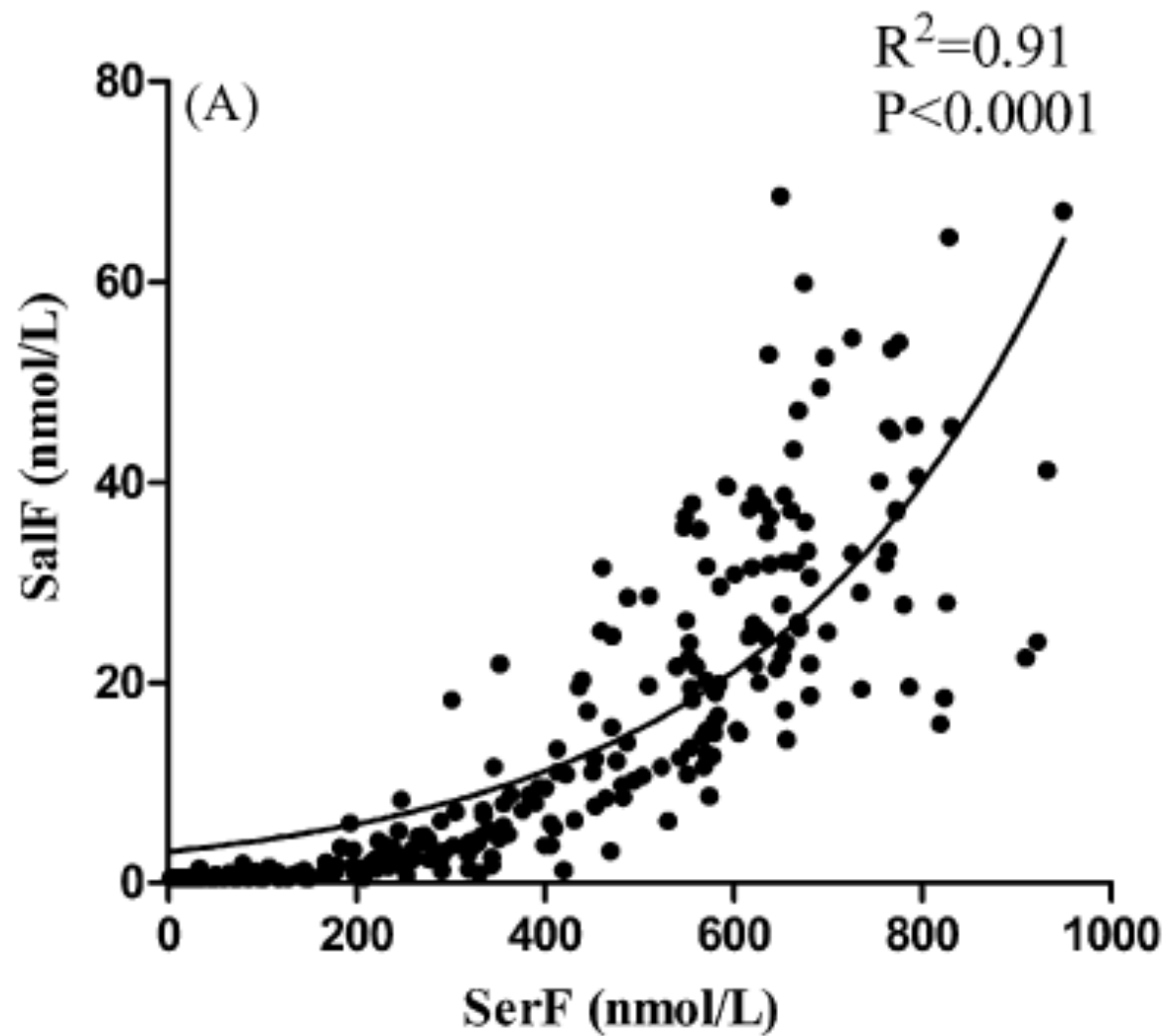
Plasma vs EDTA Mitra cortisol



Plasma vs blood cortisol

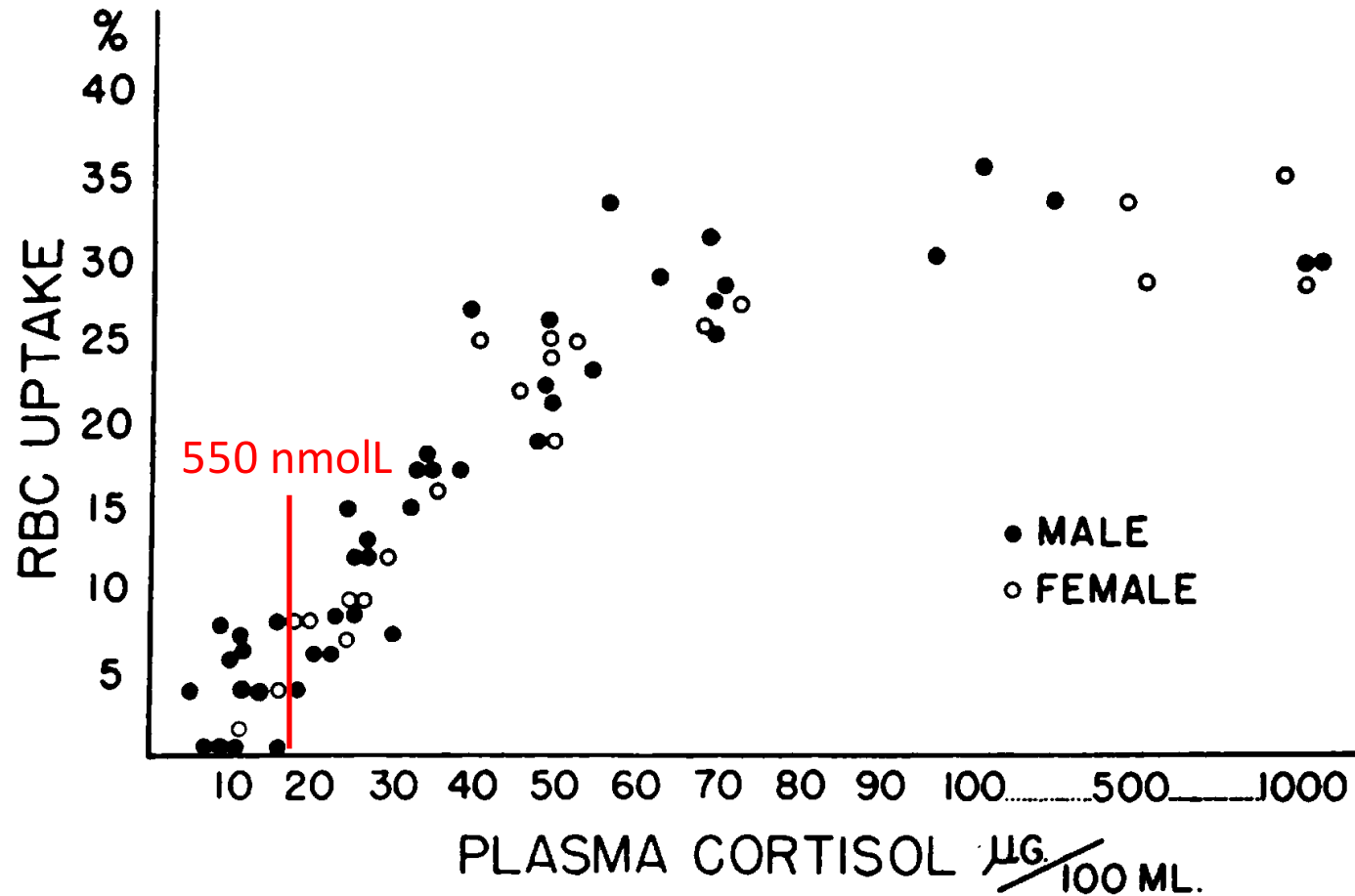


Free cortisol



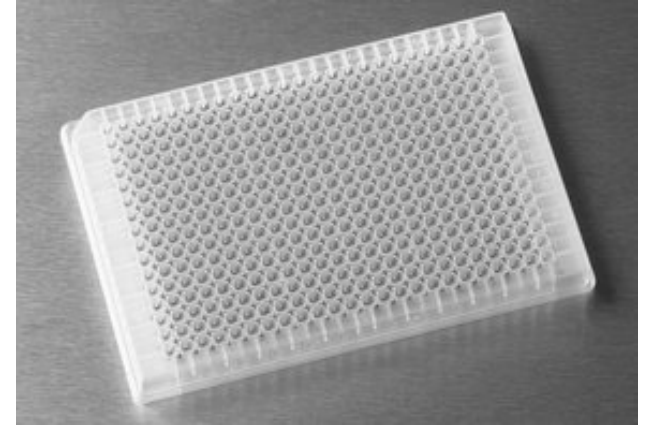
THE *IN VITRO* RED BLOOD CELL UPTAKE OF C¹⁴-CORTISOL;
STUDIES OF PLASMA PROTEIN BINDING OF CORTISOL
IN NORMAL AND ABNORMAL STATES *

By ROBERT V. FARESE† AND JOHN E. PLAGER‡



Mitra Haematocrit

- 10 μ l of blood lysate
- 80 μ l sulfolyser reagent (Sysmex)
- Nunc 384 well plate
- Read at 550 nm
- Calibrated using blood samples with known Hct



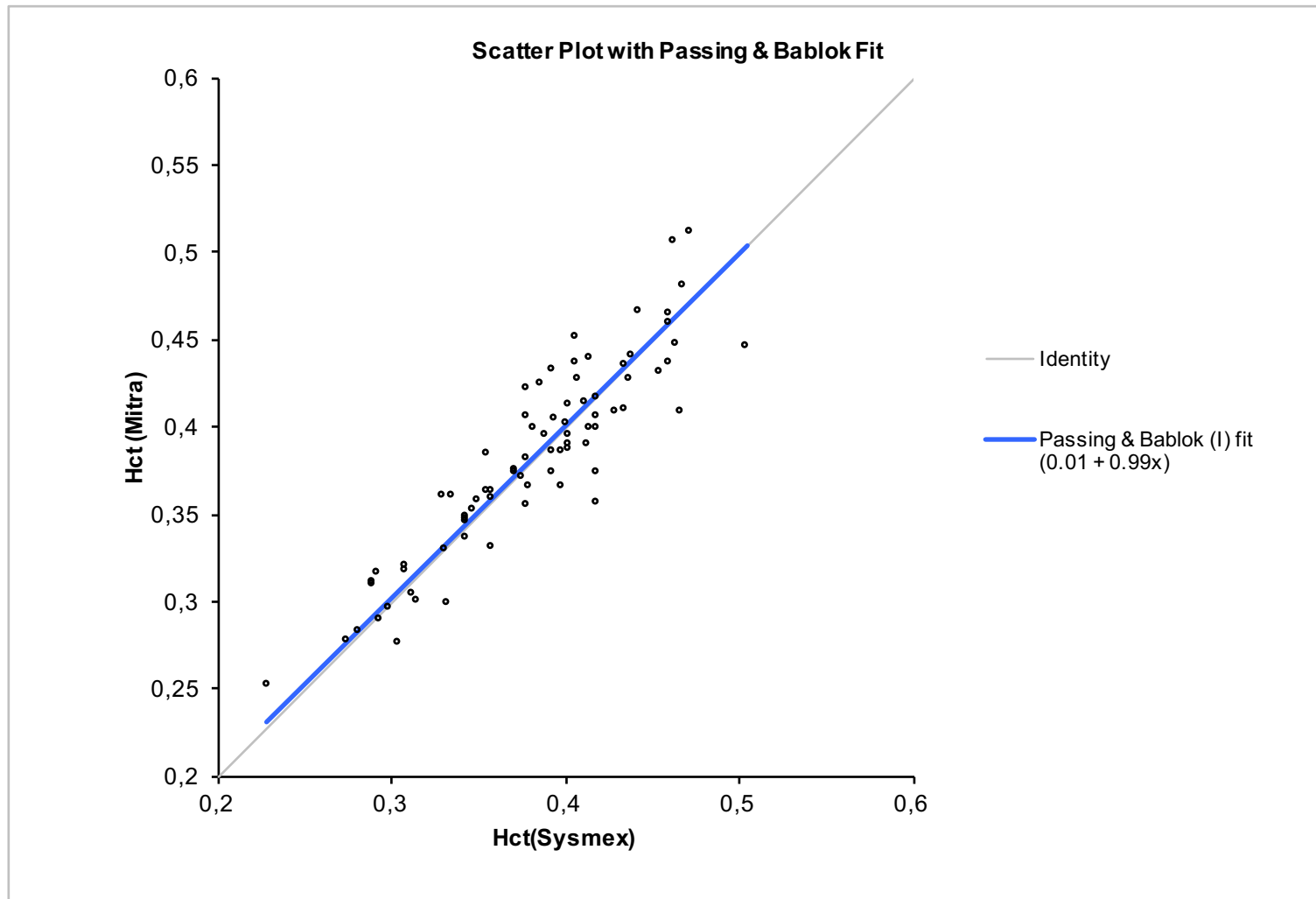
Richardson G, Marshall DJ, Keevil BG.

ANNALS EXPRESS: The prediction of haematocrit in dried blood spots from the measurement of haemoglobin using commercially available sodium lauryl sulphate.

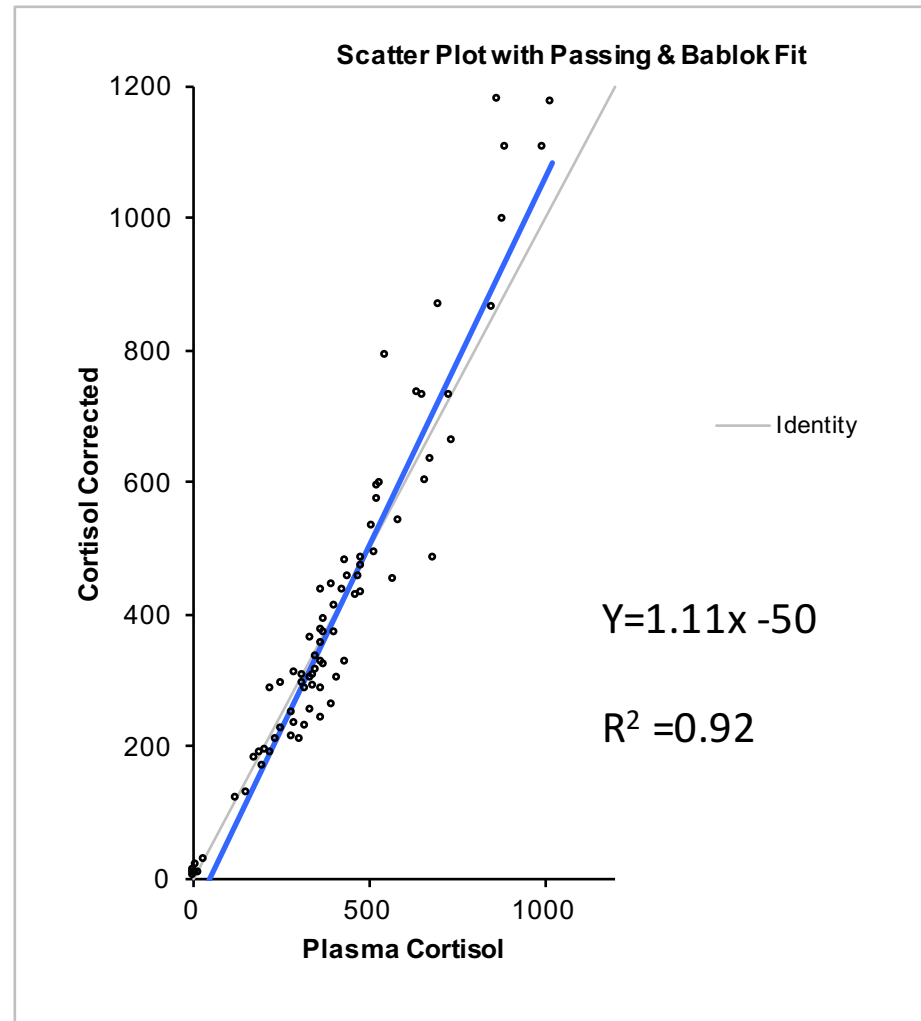
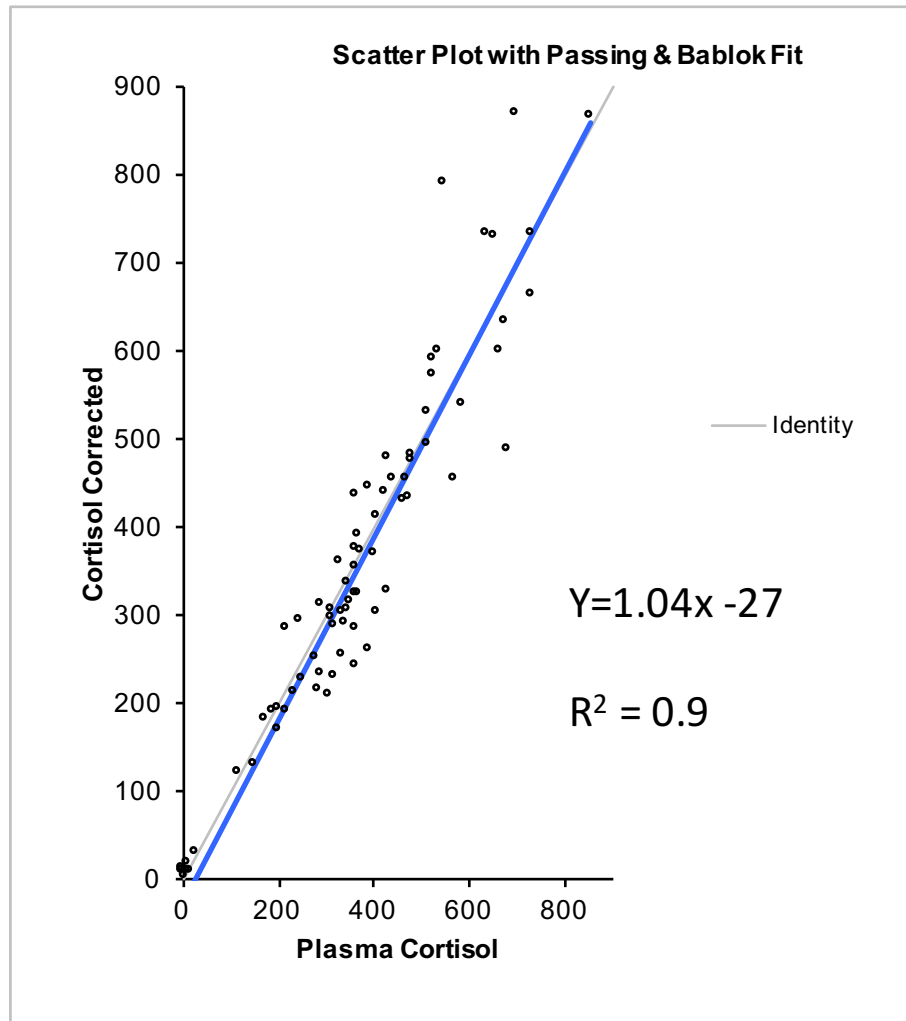
Ann Clin Biochem. 2017 Jan 1:4563217726809. doi: 10.1177/0004563217726809. [Epub ahead of print]

Hct (Sysmex) vs Hct (Mitra)

(n=79)



Plasma cortisol vs corrected EDTA Mitra cortisol (n=79)



Heel prick Cortisol

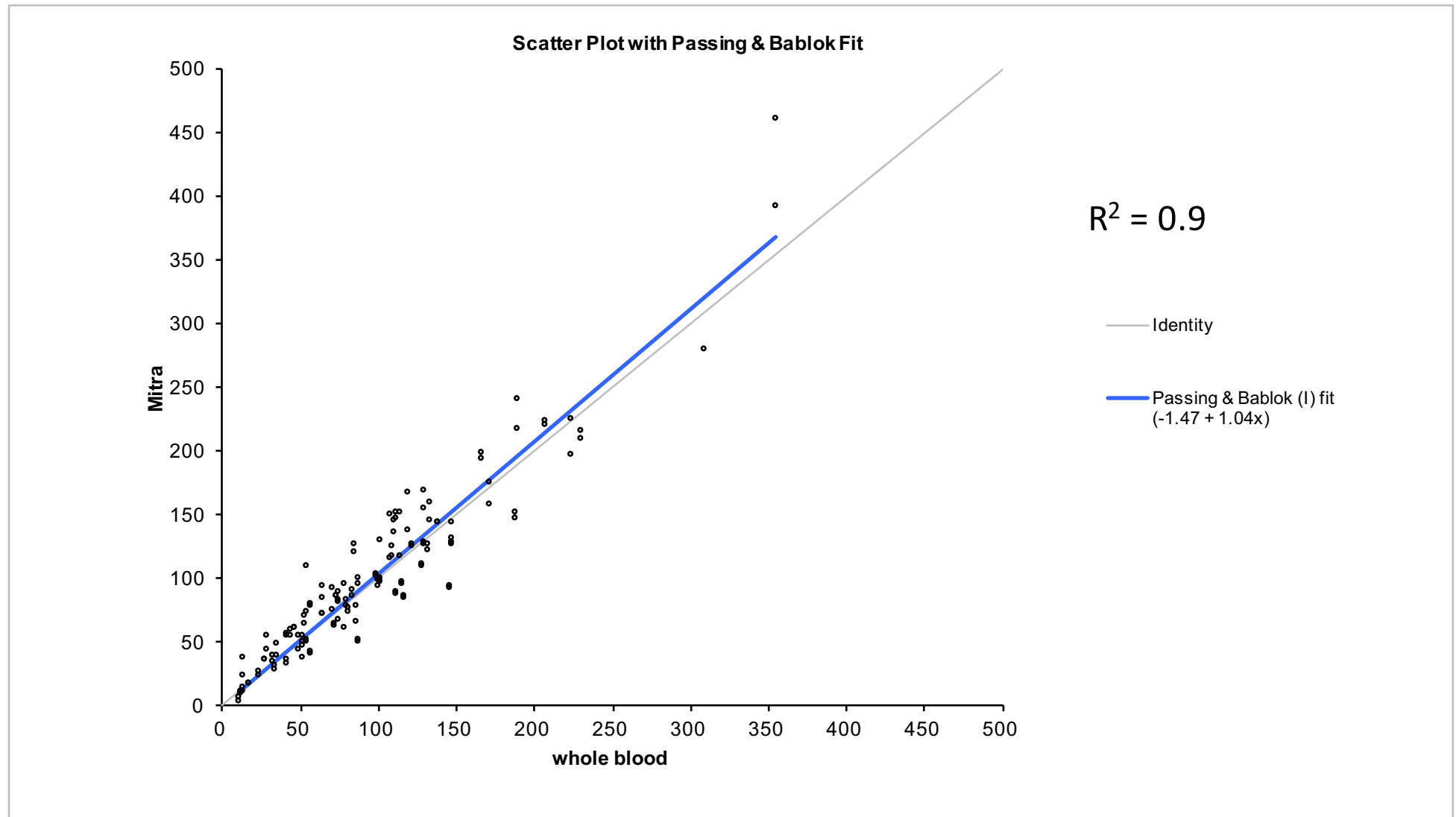
Samples collected from 57 neonates on the neonatal ICU

Cortisol was measured on

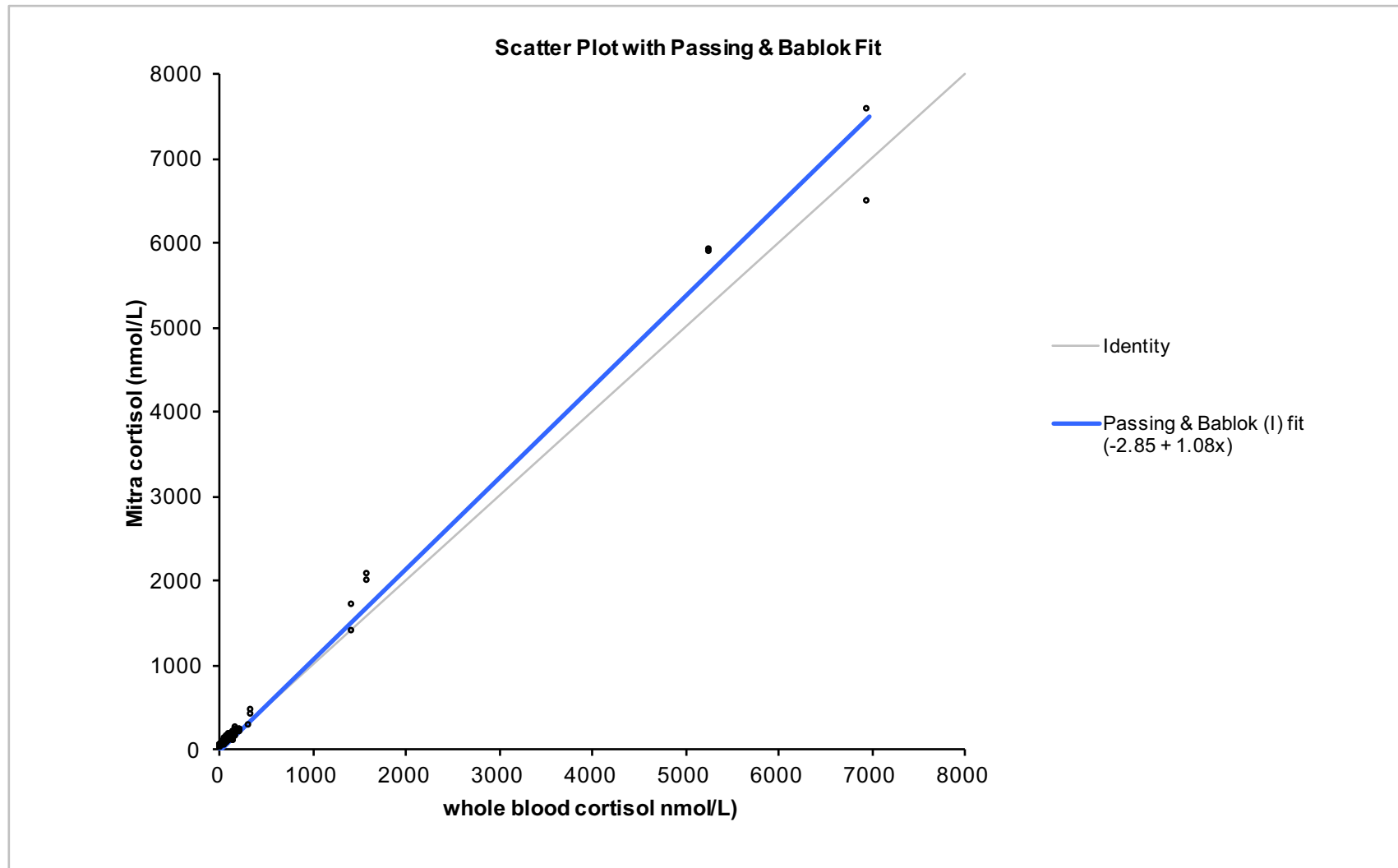
- fresh whole EDTA blood sample
- plasma cortisol on the separated fresh blood

Paired Mitra collected at same time as blood sample using a heel prick

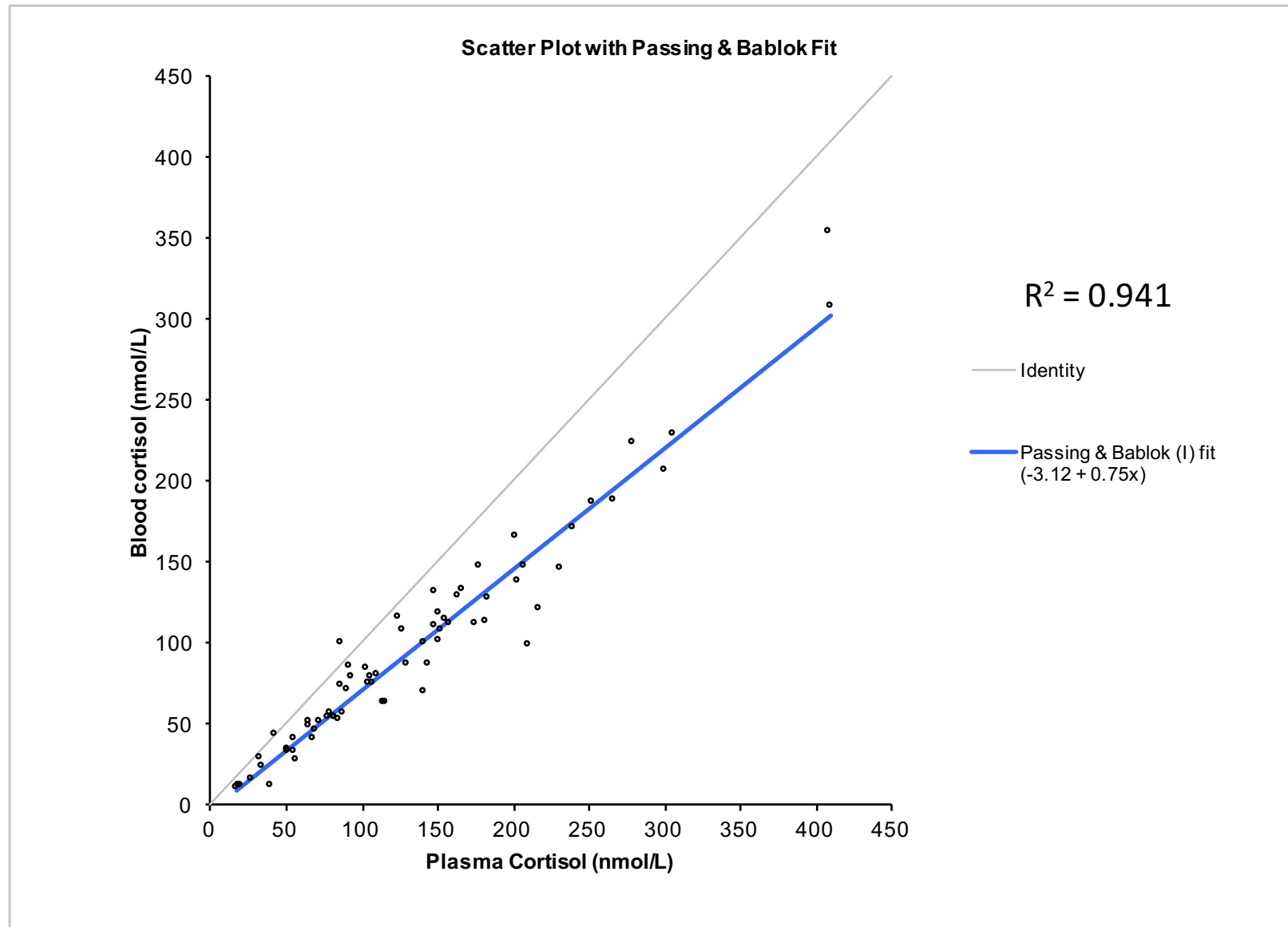
Whole blood cortisol vs Mitra cortisol (n=114)



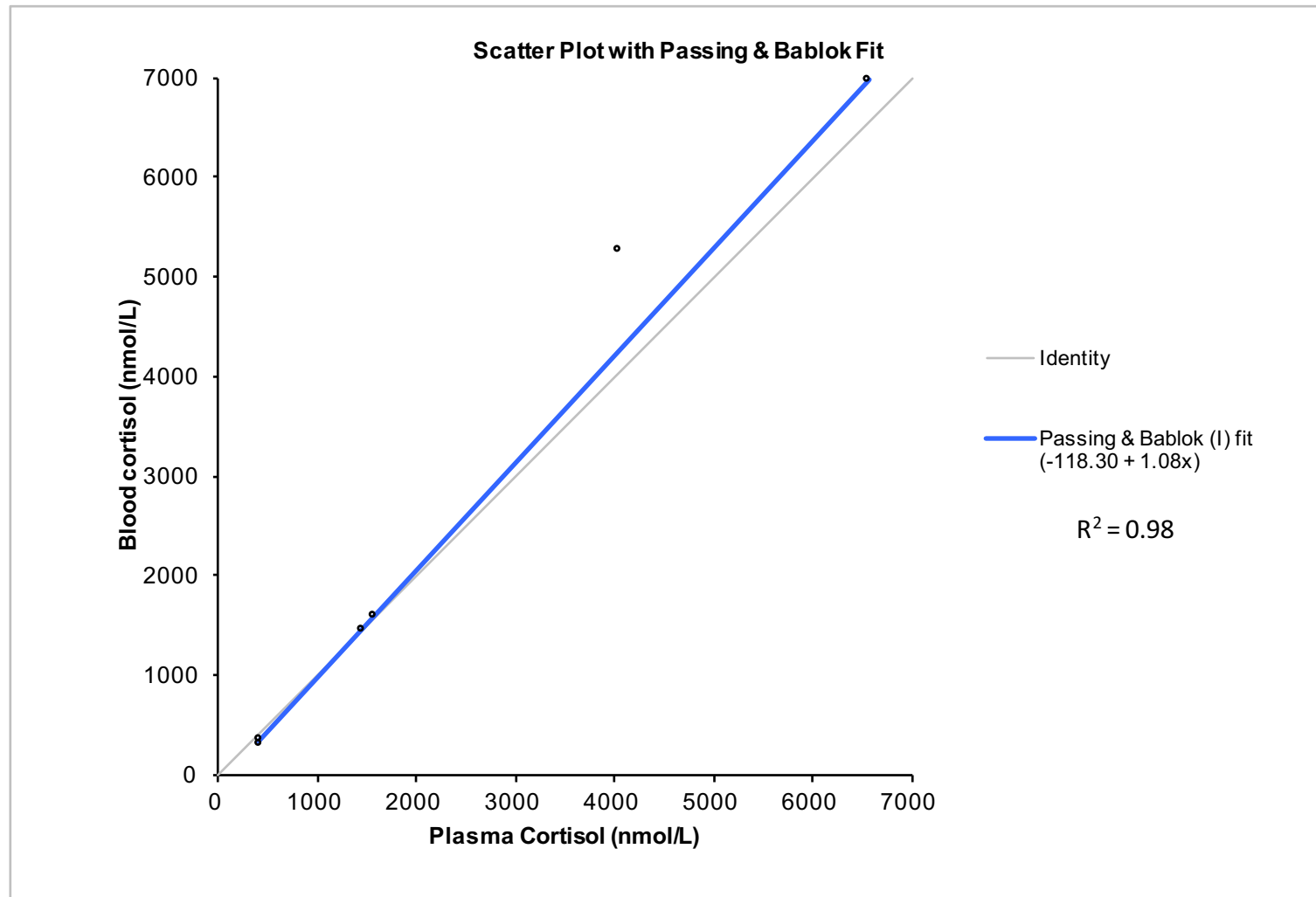
Whole blood cortisol vs Mitra cortisol



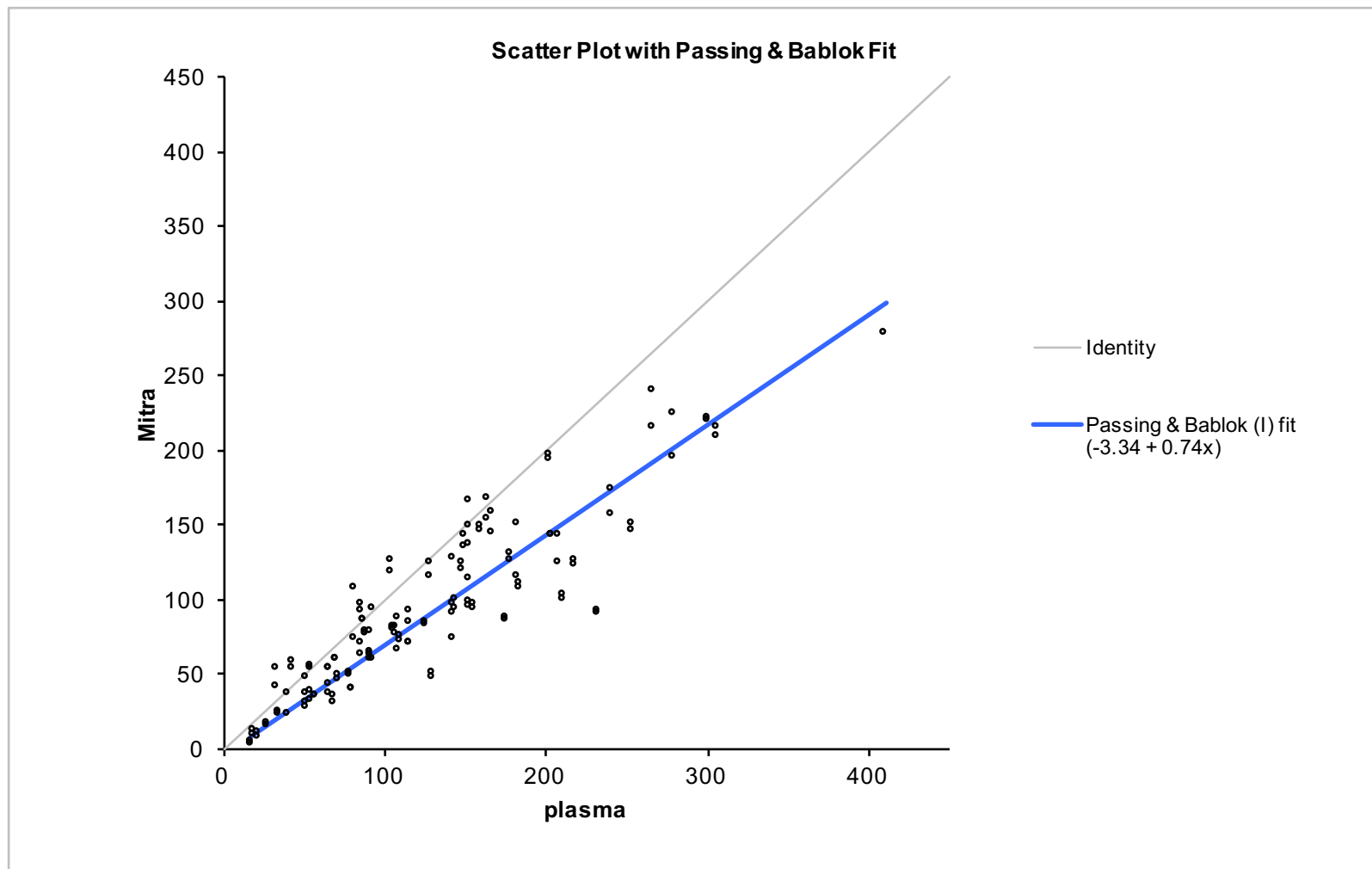
Plasma cortisol vs whole blood cortisol



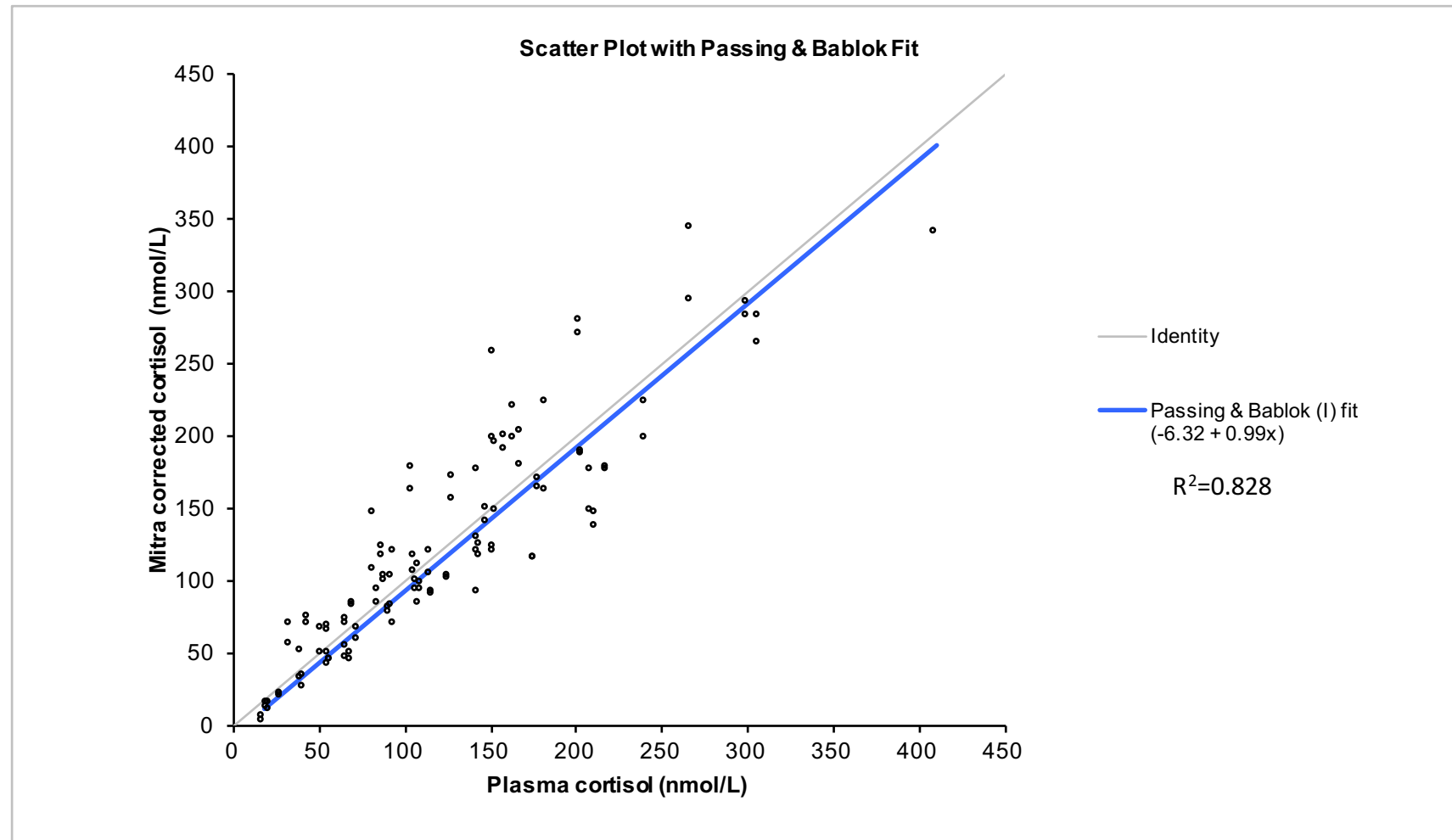
Plasma cortisol vs whole blood cortisol



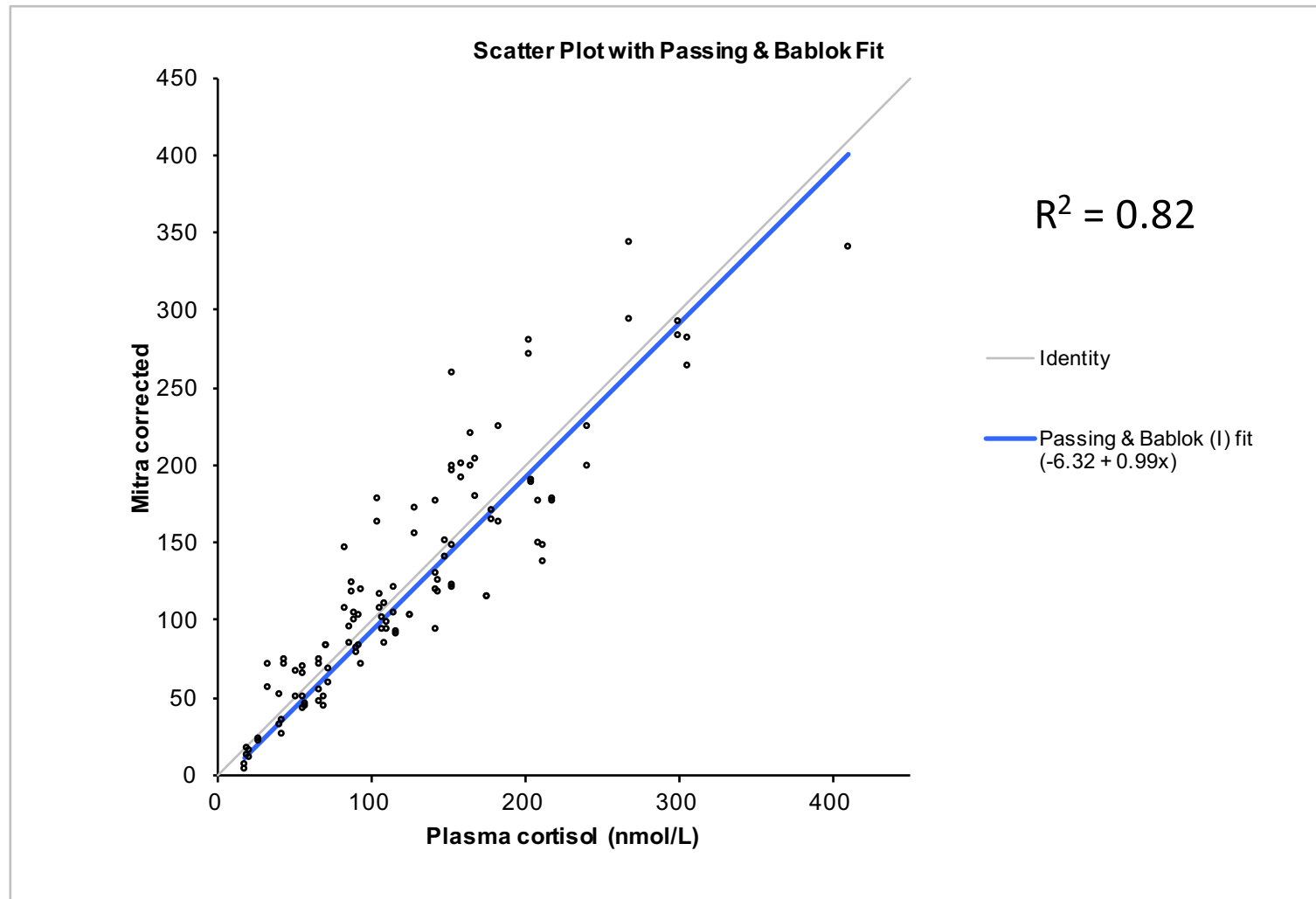
Plasma cortisol vs Mitra cortisol (heel prick)



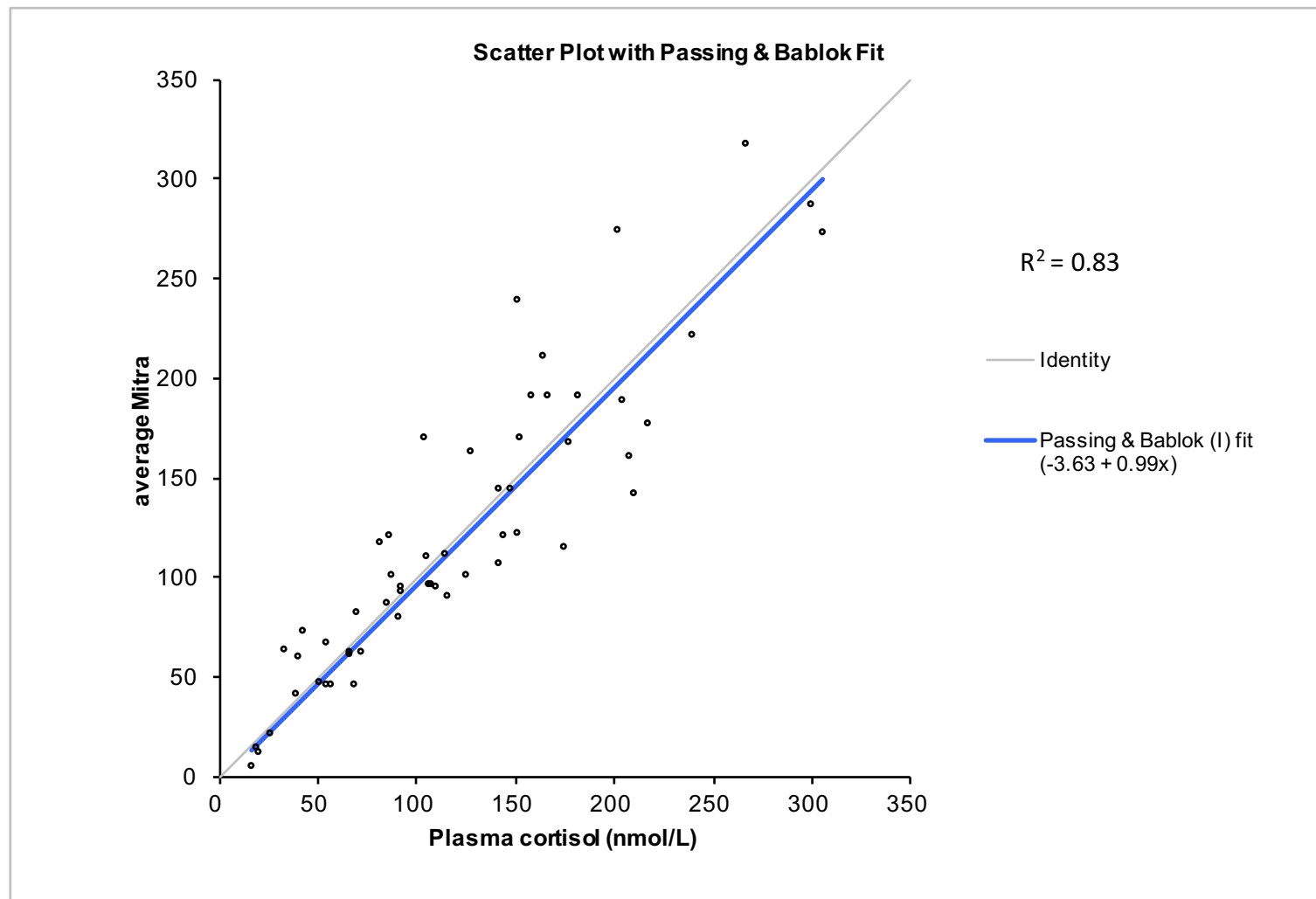
Plasma cortisol vs Mitra cortisol (Mitra corrected using Hct [Sysmex])



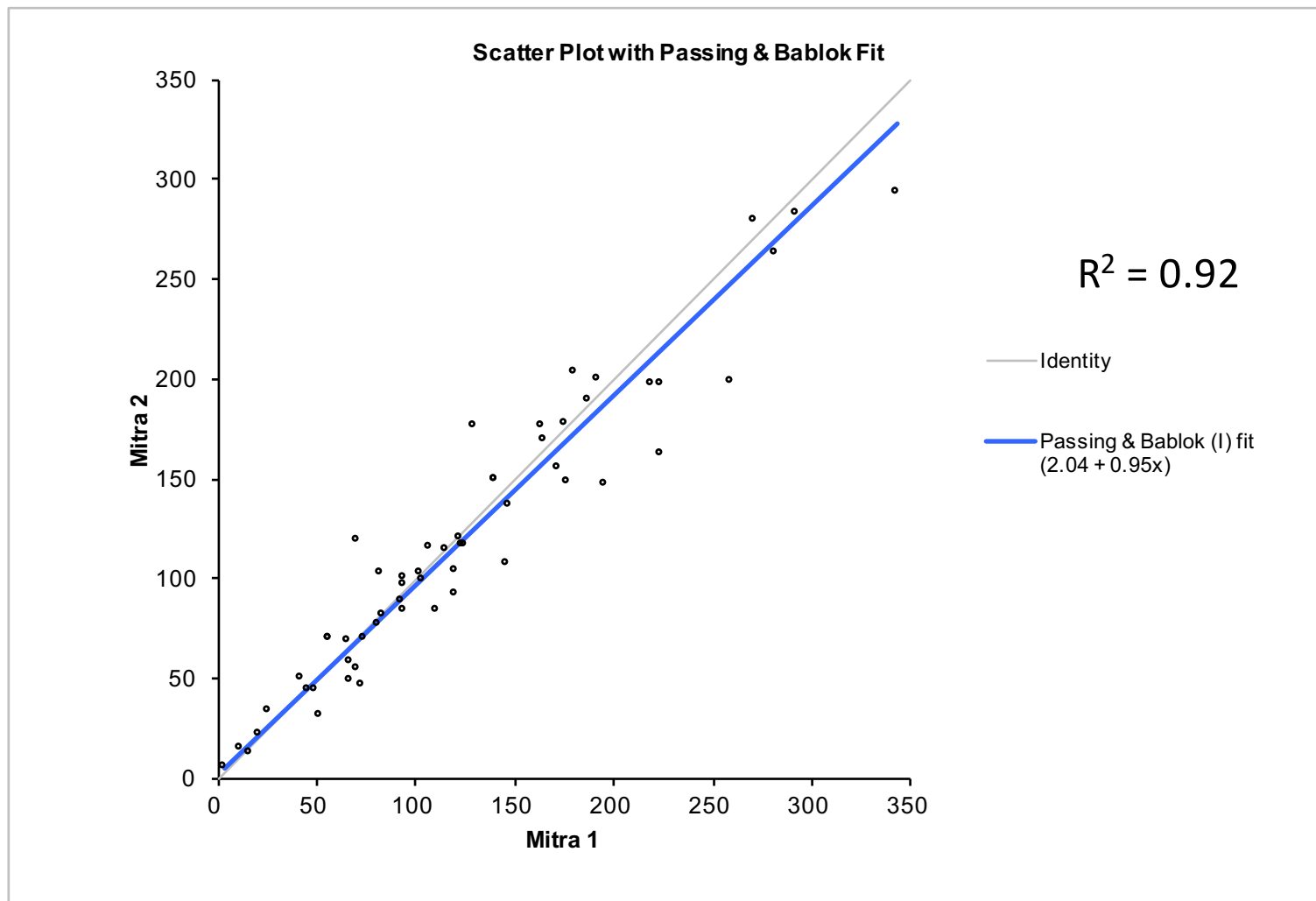
Plasma cortisol vs corrected Mitra cortisol



Plasma cortisol vs average Mitra cortisol



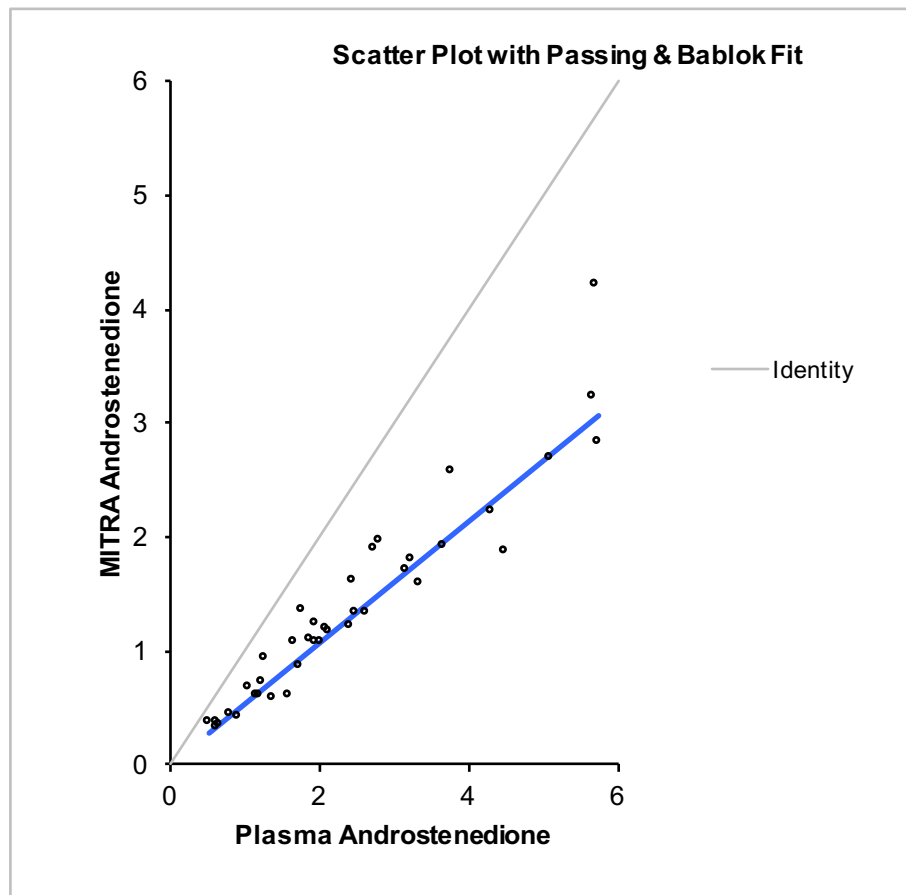
Comparison of paired Mitra Samples (n=57)



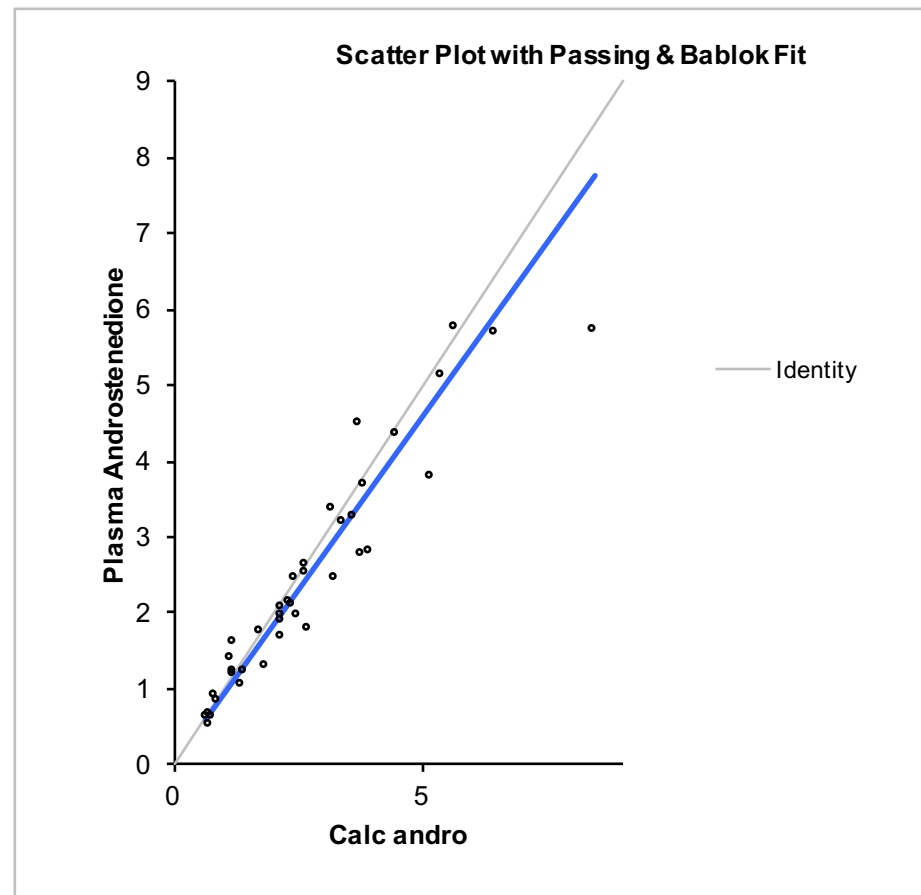
Androstenedione

Mitra vs Plasma (n=40)

Uncorrected Mitra



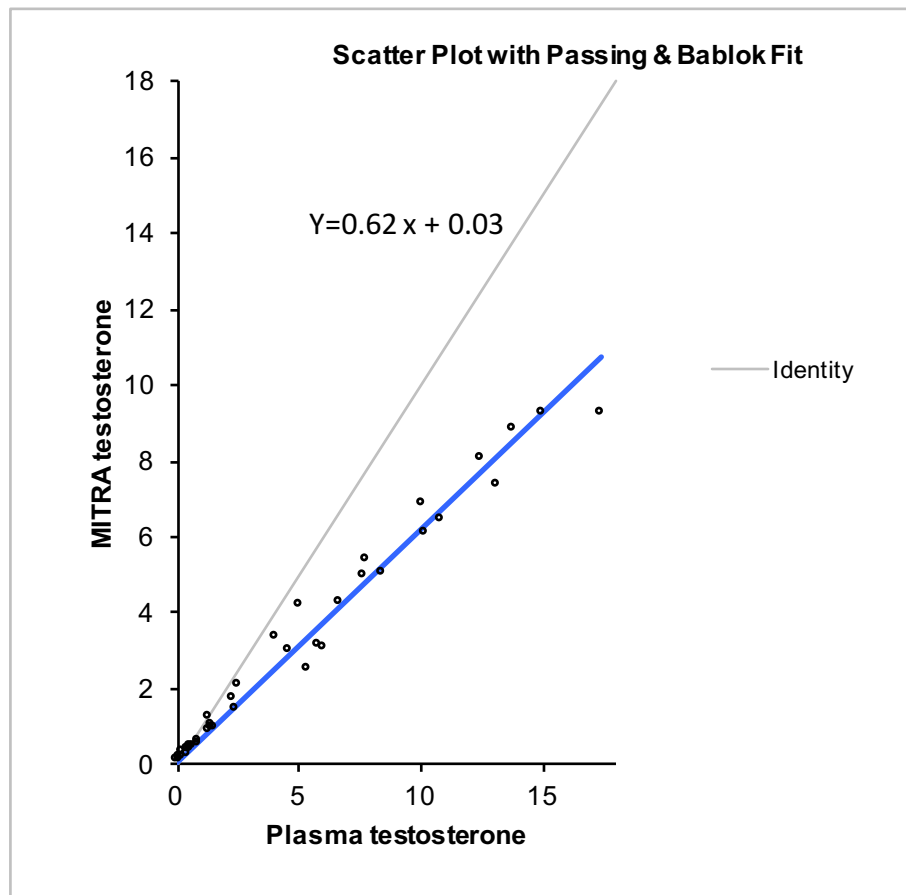
Corrected Mitra



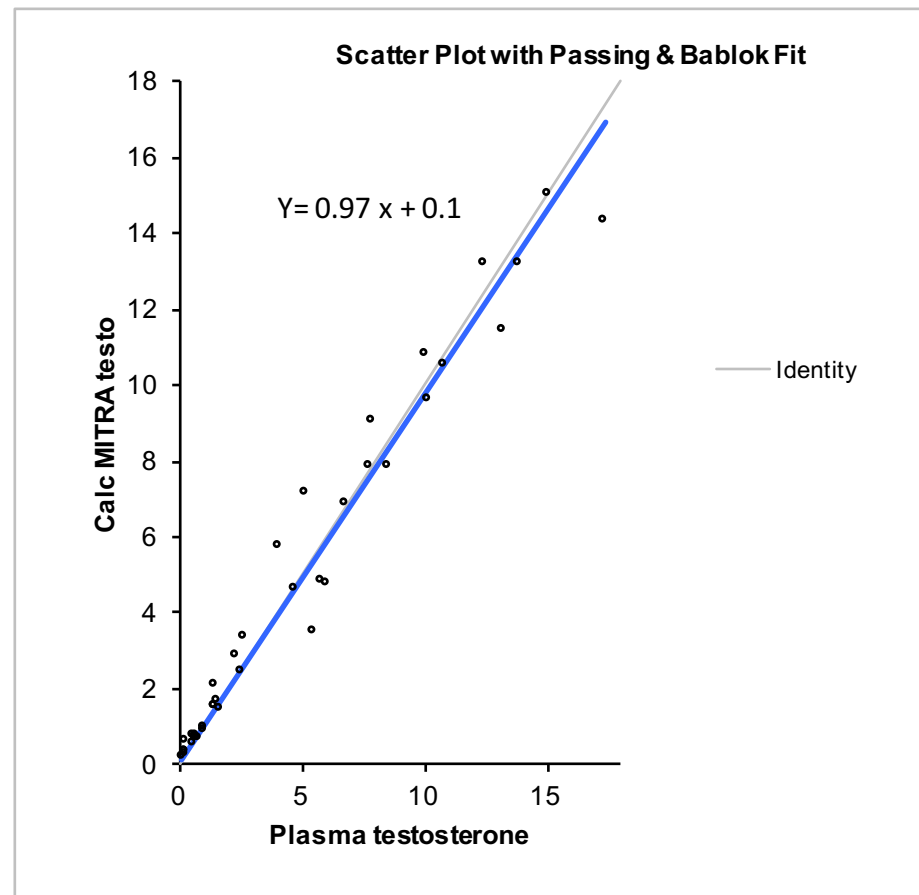
Testosterone

Mitra vs plasma (n=30)

Uncorrected Mitra

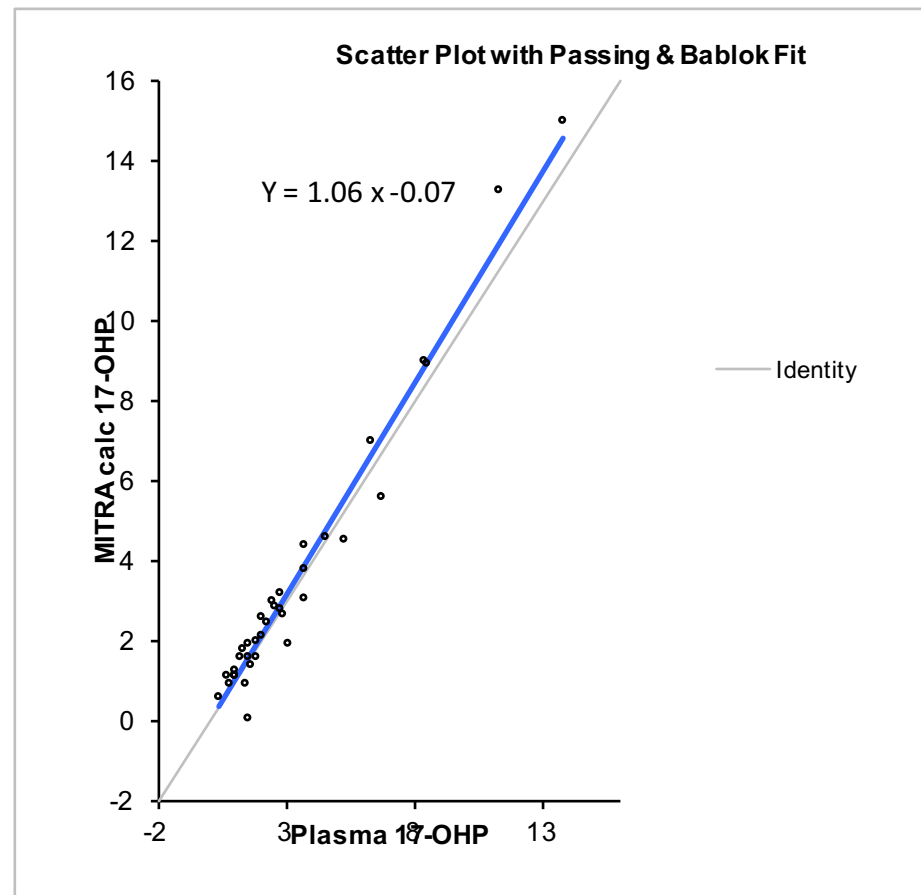
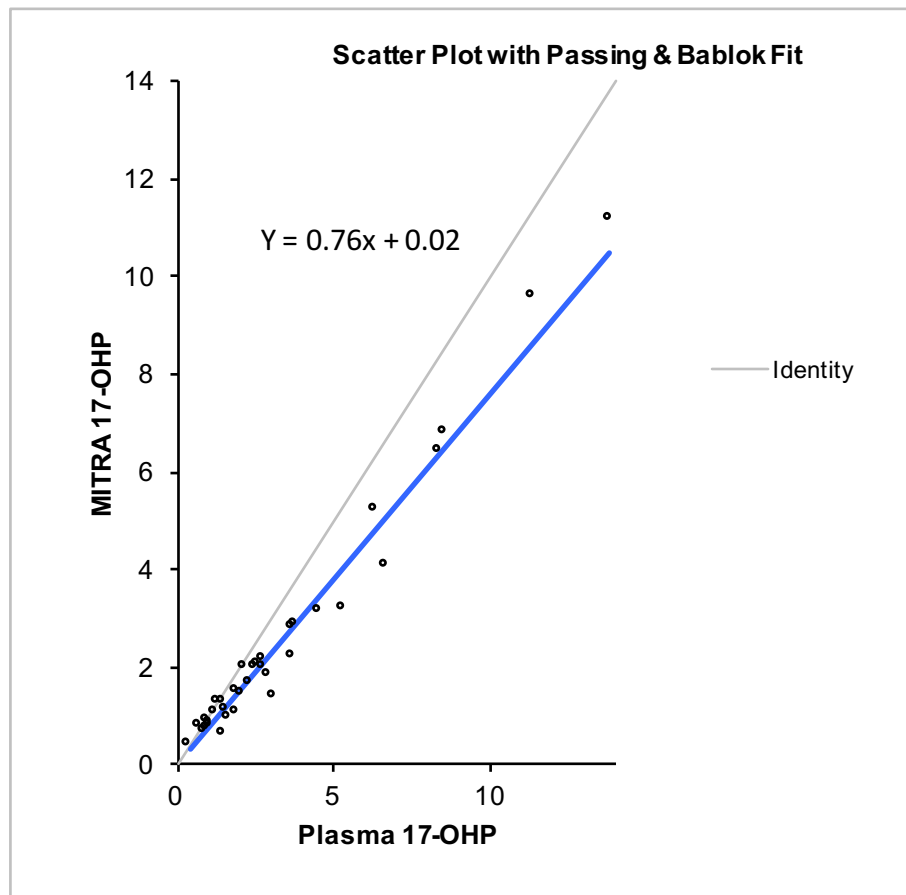


Corrected Mitra



17OHP

Mitra vs plasma (n=30)



Conclusion

- Hct correction is needed for some steroids
- Hct can be predicted using only 10% of the Mitra sample.
- Further work is needed to evaluate fingerprick collection for the androgens