



Educational Discussion

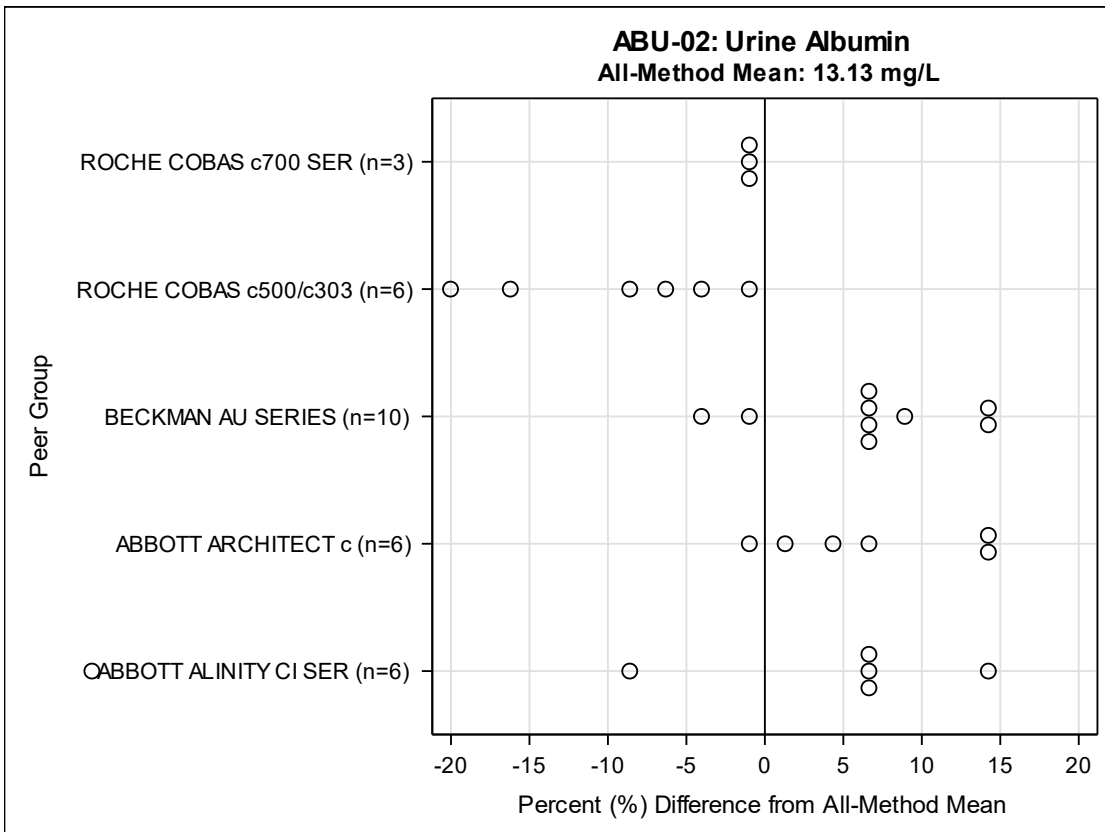
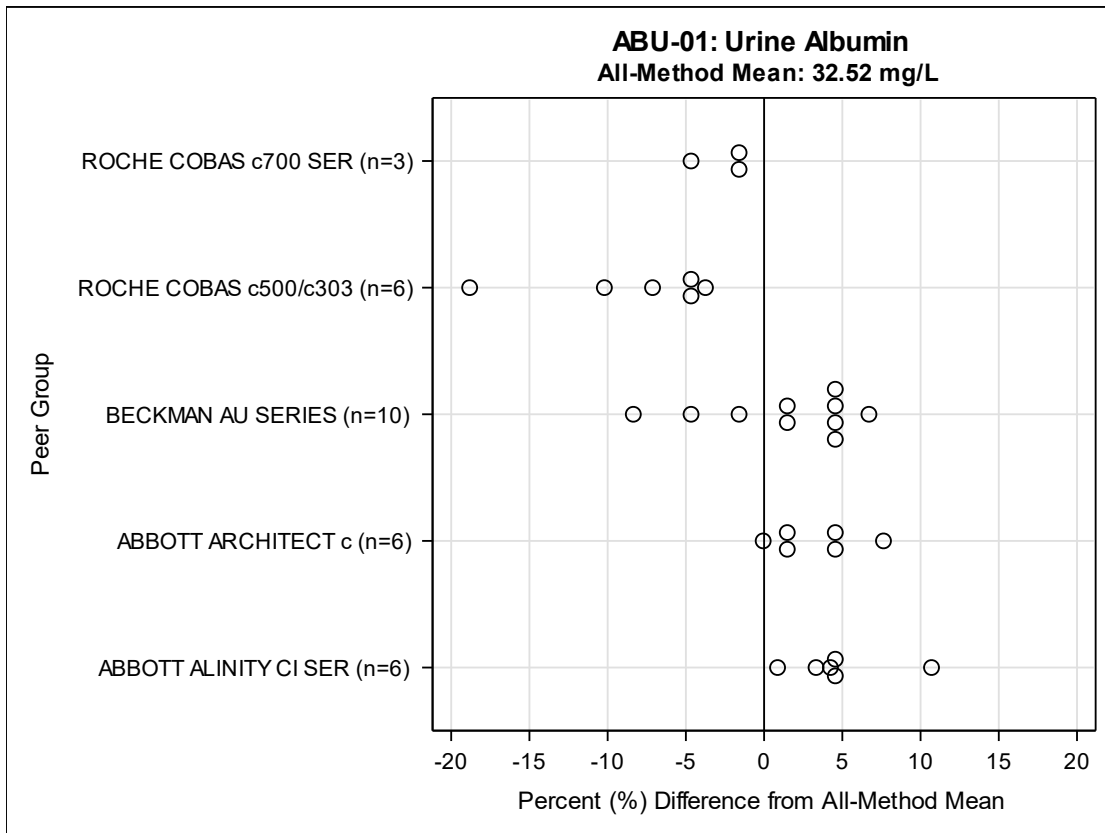
2023-A Accuracy-Based Urine (ABU)

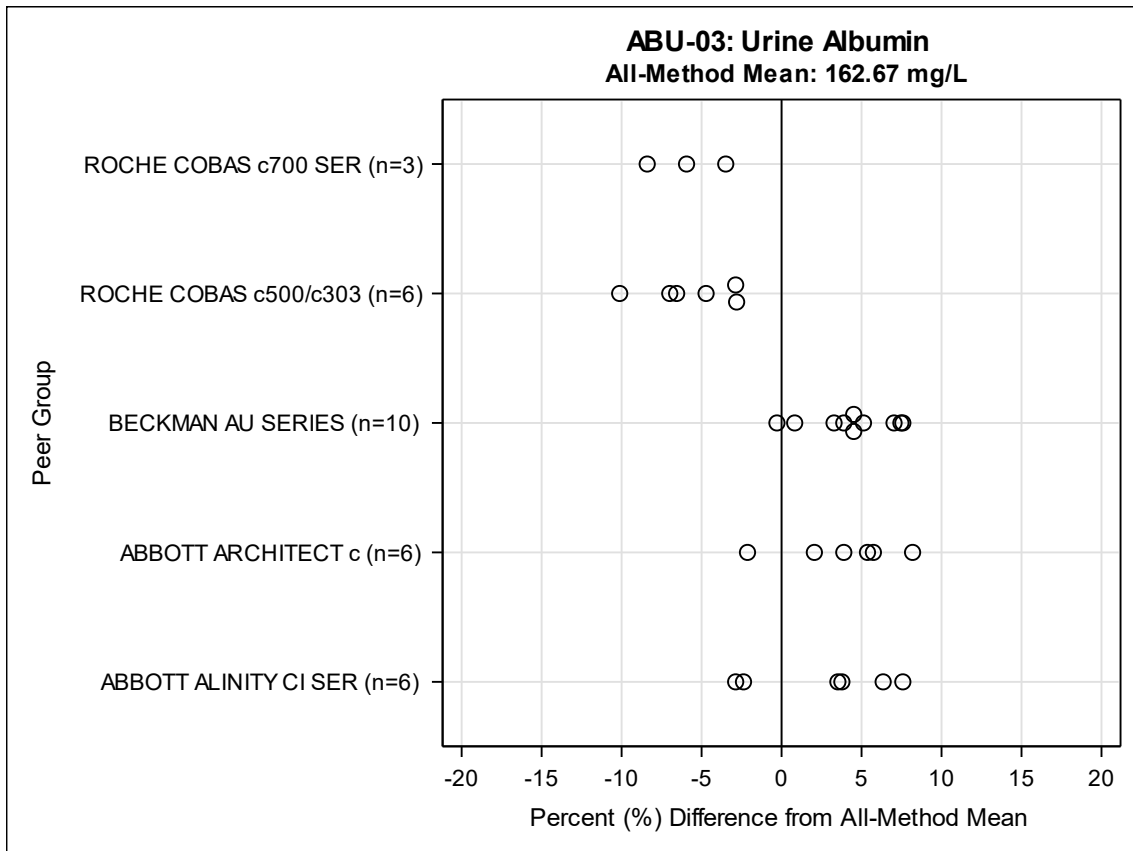
The Laboratory Working Group of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and the International Federation of Clinical Chemistry (IFCC) Working Group on Standardization of Albumin in Urine (WG-SAU) are collaborating to facilitate the development of reference measurement procedures for urine albumin. Candidate reference measurement procedures (cRMPs) for urine albumin are under development at the National Institute of Standards and Technology (NIST), the Mayo Clinic Renal Function Laboratory, the University of Minnesota, and the Chemical Metrology Division of the Health Sciences Authority in Singapore.

Urine albumin target values for the 2013-2020 ABU Surveys were based on value assignments provided by the Mayo Clinic Renal Function Laboratory. However, comparisons among the cRMPs have suggested that metrological traceability of calibrations needs to be refined. In 2021, we recommended using all-method mean values for self-assessment in the ABU Survey. Beginning in 2022, participant results for albumin were formally evaluated against the all-method mean values, until the reference system network is further developed. This information provides assessment of the agreement of results among the measurement procedures represented in the Survey. Participant results for creatinine are graded against the reference measurement procedure target value, provided by the CDC Reference Laboratory, Division of Laboratory Sciences, Centers for Disease Control and Prevention. The albumin-to-creatinine ratio (ACR) is not graded but is informative. The 2023 ABU Survey evaluation criteria for each analyte are shown on the previous page.

For ABU-A 2023, the overall albumin participant pass rates were 100%, 100%, and 97.8% for specimens ABU-01, ABU-02 and ABU-03, respectively. The overall participant pass rates for creatinine were 96.1%, 92.2% and 94.1%, respectively. The ABU Survey materials are prepared from minimally processed human urine to ensure the materials are commutable with clinical urine samples and can be used to evaluate agreement among measurement procedures.

Percent differences for urine albumin results reported by participants were compared to the all-method mean for measurement procedures with at least three participants. The data are shown in the Figures below. For ABU-01 (all-method mean value of 32.52 mg/L) and ABU-03 (all-method mean value of 162.67 mg/L), all participants for each measurement procedure reported urine albumin values within approximately $\pm 10\%$ of the all-method mean with the exception of one and two participants, respectively. For the lower concentration sample, ABU-02 (all-method mean value of 13.13 mg/L), all participants for each measurement procedure reported urine albumin values within $\pm 15\%$ of the all-method mean with the exception of two participants. These data suggest that current agreement among measurement procedures is good for urine albumin. The overall pass rate for urine creatinine is also consistent with good performance.





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