

## Abstract details

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### GLUCOSE AND ALBUMIN QUANTIFICATION ARE POTENTIAL INDICATORS OF THE STABILITY OF LONG-TERM STORED SAMPLES FOR GLYCATED ALBUMIN MEASUREMENT?

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#### Abstract text

Monitoring the glycemic status is most important for cardiovascular risk estimation. Glycated albumin (GA%) is receiving growing interest as a biomarker which could support clinician's efforts for diabetes management and to prevent long-term cardiovascular-related complications. For research purposes, samples stored at -20°C for more than 6 months seem not suitable for GA% quantification due to a time-dependent increase in GA% level.

Our aim is to assess whether stored samples are suitable for GA% quantification, exploring the usefulness of glucose (Glu) and albumin (Alb) as indicators of stability. We quantified GA%, Alb and Glu levels on 60 serum samples of healthy non-diabetic individuals (20 males and 40 females; mean age: 38.3±12.47 years; body mass index: 25.94±2.46 kg/m<sup>2</sup>) stored at -20°C for 3.64±0.57 years

(T1). Alb and Glu values at drawing time (T0) were also available. GA% was quantified using QuantILab Glycated Albumin assay.

Mean GA% was  $31.69 \pm 5.77$ . Compared to T0, both Alb and Glu decreased at T1 (-25% and -16%, respectively;  $p < 0.001$  for both). GA% correlated inversely with Alb at T1 (-0.286,  $p = 0.027$ ) and directly with storage time (0.357,  $p = 0.005$ ). No correlations were observed with Glu and overt time changes in Glu and Alb (T0-T1).

Obtained GA% values are not reliable, being typical of diabetic individuals. Alb instability in samples stored at  $-20^{\circ}\text{C}$  seems to be one of the main factor affecting GA% quantification and could enforce previously published data.

A suspicious decreased value of Alb compared to time of freezing may suggest that stored samples are inadequate for GA% quantification.

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