



Editorial

Also low enzyme activities have a clinical meaning!



In this issue, Ndrepepa et al. described an inverse correlation between alanine amino transferase (ALT) activity in plasma and prognosis in coronary artery disease [1]. This manuscript confirms the importance of low ALT values. In this paper, the ALT IFCC reference method (including vitamin B6 in the recipe) has been used for assaying ALT activity [2]. It should be mentioned that many vendors and many clinical laboratories do not follow this international recommendation and omit the addition of the cofactor pyridoxal-5'-phosphate (vitamin B6) for practical reasons [3]. Adding 100 $\mu\text{mol/L}$ concentration of pyridoxal-5'-phosphate to the reaction mixture results in an increase in absorbance at 340 nm of approximately 0.2, which limits the dynamic range of the ALT assay [4]. This modification results in a systematic reduction of the ALT activity [5]. In extreme situations, false negative ALT results may be observed in case of a vitamin B6 deficiency.

Whereas for decades, clinical enzymology has highlighted the importance of increased enzyme activities in body fluids for detecting cellular lesions, it is time to reflect on the cause and the diagnostic significance of lower plasma enzyme activities as well. Also in other clinically used enzymes such as creatine kinase [6,7] or alkaline phosphatase [8,9], low enzyme activities in serum or plasma have been demonstrated to be of clinical importance.

For interlaboratory comparison of low ALT enzyme activities, a careful comparison of methodological details is compulsory. When reporting reference values for enzyme activities in serum or plasma, also the under reference limit should be mentioned.

References

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