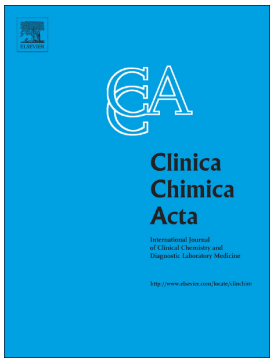

A negative lactate dehydrogenase activity corrected after sample neuraminidase treatment

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A negative lactate dehydrogenase activity corrected after sample neuraminidase treatment

To the Editor,

Cases of paraprotein interference have been reported for various automated chemistry assays. Here we describe for the first time a paraprotein interference in lactate dehydrogenase (LD) assays and present alternative approaches to solve interference in this specific case.

A 69-y-old female with a history of kidney transplantation at the age of 65, for which she was taking sirolimus 0.75 mg twice daily, was admitted to the hospital with suspicion of post-transplant lymphoproliferative disease. Work-up revealed an increased monoclonal IgM concentration (35.3 g/L) and an artifactually negative LD serum activity (-106.2 U/L) (IFCC-recommended method on a Roche Cobas 8000 c701 instrument; LDHI2) [1]. The interference persisted in subsequent samples of the patient. Visual inspection of the cuvette rotor showed the occurrence of a marked precipitation during the reaction, most likely caused by the paraprotein. Figure 1 shows the precipitation cloud. LD electrophoresis showed a normal activity and a normal LD iso-enzyme pattern with an LD-2 predominance (data not shown).

In order to further explore these findings, the sample was re-analyzed using reagents from other vendors. LD measurement using three reagents based on the IFCC-recommended method [i.e. lactate → pyruvate (reagent pH 9.4); Abbott Diagnostics (Architect Plus c4000), Beckman Coulter (AU 480), Siemens (Dimension Vista)] and the reverse reaction on a Roche Cobas 6000 c502 analyzer (pyruvate → lactate, reagent pH 7.5) [2]. Using these assays, normal LD-activities were consistently recorded (119-125 U/L; reference range: 105-233 U/L).

Diluting the sample resulted in disappearance of the interference in the Roche LDHI2 assay [3]. At a sample dilution of 1:20 in phosphate buffered saline, precipitation was no longer visible; a recalculated LD activity of 126 U/L was obtained. However, as the LOD of