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Zinc Determination in Pleural Fluid

Nazan DEMİR, Yaşar DEMİR

Atatürk University, Faculty of Science,

Department of Biochemistry, Erzurum-TURKEY

Ebubekir BAKAN, İrfan KÜFREYOĞLU

Atatürk University, Medical School,

Department of Biochemistry, Erzurum-TURKEY

 [Keywords](#)
[Authors](#)



chem@tubitak.gov.tr

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Abstract: In this study, an enzymatic zinc determination method was applied to pleural fluid, the basis of which was the regaining of the activity of apo carbonic anhydrase by the zinc present in the sample. The method was used for pleural fluid zinc determination in order to show the application to body fluids other than serum. For this purpose, pleural fluids were obtained from 20 patients and zinc concentrations were determined. Carbonic anhydrase was purified by affinity chromatography from bovine erythrocytes. The zinc present in its structure was removed by dialysis against dipicolinic acid, resulting in apoenzyme obtained at a ratio of 100%. The activity of the enzyme was determined by the esterase action on p-nitrophenyl acetate. For comparison, the same samples were analyzed in atomic absorption. The results obtained were evaluated statistically. ($>$)0.05 t-test, ($<$)0.001 Zn^{2+} (AA)- Zn^{2+} (apoCA), ($<$)0.005 Zn^{2+} (apoCA)-Total protein).

Key Words: Pleural fluid, Zinc determination, Apo Carbonic Anhydrase

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