Chromium Incorporated in RNA and DNA

Renata Krupa, Marcin Stañczak and
Zofia Walter*

Laboratory of Nucleic Acids, Department of Molecular Genetics, University of Łódź, Banacha 12/16, 90-237 Łódź, Poland. Fax: 048426354484.
E-mail: zwalter@taxus.biol.uni.lodz.pl

* Autor for correspondence and reprint requests

Z. Naturforsch **57c**, 951–953 (2002);
received December 19, 2001/July 15, 2002

Chromium, RNA, DNA

The objective of this study was to examine the effect of Cr(III) (chromium chloride) and Cr(VI) (potassium dichromate) on RNA and DNA-chromium adducts formation in isolated nucleic acids and isolated pig lymphocytes. The incubation of cells with potassium dichromate and chromium chloride at concentrations of 10 and 100 μM results in binding of a 1.2–1.9 fold greater number of chromium atoms to nuclear DNA than to total cellular RNA. The incubation of total cellular RNA and nuclear DNA isolated from lymphocytes with $CrCl_3$ and $K_2Cr_2O_7$ yielded a binding of 1.1–1.6 fold more of Cr atoms to RNA than to DNA. The number of chromium atoms bound to nucleic acids is higher after incubation with $K_2Cr_2O_7$ than with $CrCl_3$ in both experimental systems.