Studies on the biological effects of ozone 1. Induction of interferon gamma on human leucocytes

Article *in* Haematologica 75(6):510-5 · November 1990 *with*32 Reads
Source: PubMed
Cite this publication **V Bocci** **Luana Paulesu**

- Università degli Studi di Siena

Abstract

In this study we have investigated the effects of ozone on human blood, as well as on resuspended buffy coats and Ficoll-purified mononuclear cells. Samples were exposed at different ozone concentrations (from 2.2 micrograms to 108 micrograms/ml) for 30 sec and then incubated for different times at 37 degrees C in a 95% air-5% CO2 humidified atmosphere. Supernatants were collected and frozen at-20 degrees C until tested for interferon (IFN) activity. We have determined that the ozone concentration is critical for lymphokine induction. In fact, while low concentrations (2.2 micrograms/ml) are effective in lymphocytes, they do not induce IFN in either whole or diluted (1:1) human blood, or resuspended buffy coats**. In such cases levels as high as 42 micrograms/ml are required.** On the other hand, a very high ozone concentration (108 micrograms/ml) is not effective and probably toxic. **Maximal IFN production occurs 72-96 h after ozone exposure**, and the kinetics of IFN release is similar to that after Staphylococcal Enterotoxin B addition. Because ozonization of blood is a medical procedure followed in several countries for treatment of viral diseases, this study can open a new field of investigation that may yield useful results both in biological and practical terms.