Identifying and Controlling Immunotoxic Substances

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Foreword

Thousands of new chemical substances enter the market annually. Although the public continues to embrace the benefits of these substances, increasingly wary consumers now inquire about their downside, particularly health risks. While information about what chemicals are in the air or water and in what quantities is usually forthcoming, answers about their human health effects are often vague and unsatisfying.

Much of the American public—scientists and laymen alike—finds this uncertainty troubling. A recent novel described the impacts of an accidental chemical release on a small community. The following exchange captures the frustration of the townspeople trying to understand the consequences of the chemical exposure:

“Am I going to die?”
“Not as such,” he said.
“What do you mean?”
“Not in so many words.”
“How many words does it take?”
“Let me answer like so. If I was a rat, I wouldn’t want to be anywhere within a two hundred mile radius of the airborne event.”
“What if you were a human?”
“I wouldn’t worry about what I can’t see or feel.”*

Nowadays, after years of research, answers about potential carcinogens come more readily than those conveyed in the novel. But noncancer health risks, such as potential, adverse effects of chemicals on the nervous, immune, or respiratory systems, have received less attention and remain more of a mystery. The Senate Committee on Environment and Public Works and its Subcommittee on Toxic Substances, Environmental Oversight, Research and Development asked OTA to examine noncancer health risks in the environment, including the availability of testing technologies, future research needs, and the adequacy of the current regulatory scheme. This background paper, which describes Federal efforts to identify and control substances that may harm the immune system, is one response to that request. It builds on previous OTA work on carcinogenic and neurotoxic substances.

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