

1.4 Novel Toxins and Bioregulators

Toxins are highly effective and specific poisonous chemical substances isolated from living organisms. Bioregulators are naturally-occurring chemical substances, usually peptides, involved in the regulation of metabolic, physiological and possibly neural activities. Such bioregulators have also been referred to as neuropeptides or neuroregulators.

A rapidly expanding area of research involves identifying and synthesizing new bioregulators and toxins. Synthetic derivatives or slightly modified forms of these compounds can have drastically altered and toxic effects, and this could be important in the development of novel toxic agents. Novel toxins have been discovered which are very similar in structure and function to peptide bioregulators.

A question sometimes asked is whether a modified form of a toxin would still be covered by the Biological and Toxin Weapons Convention. In principle, it may be possible to distinguish between synthetic toxins and chemicals, but it has been suggested by some that the distinction may blur when a biologically derived toxin is synthesized in vitro and then modified. If the modified toxin were similar enough to the original molecule when examined by analytical techniques, it would likely still be considered a toxin and thus fall within the scope of the Biological and Toxin Weapons Convention. There are some who suggest that difficulties in