

is reversible may be possible. However, this will require substantial research and development.

The assertion has frequently been made that advances in technology can provide the means to produce large quantities of toxins that previously were not possible. The production of protein toxins in quantities that could be considered as militarily significant, such as ricin, botulinum toxin A and staphylococcal enterotoxin B was possible before 1970. Only in the synthesis of small peptide toxins, such as conotoxin and bioregulators, has a significant change occurred. The automated coupling of amino acids to form peptides has been developed. However, large-scale production of quantities in hundreds of kilograms has not been reported and would be a major technical, as well as expensive, undertaking.

As was described in a previous section, neurotoxins isolated from natural sources cannot be made more toxic. This imposes a fundamental constraint. This is in marked contrast to bioregulatory peptides. Analogues of bioregulatory peptides that are hundreds or thousands of times more potent than their parent molecules could be developed. This could make these molecules the most potent chemicals affecting living processes.