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## Are botulinum toxin products different

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Botulinum toxin type A products are widely used in aesthetic medicine e.g. in the treatment of glabellar lines. Three botulinum toxin type A products are marketed on the European and US market: Botox (Allergan) is claimed to contain the purified 900 kD botulinum complex, Dysport (Medicis/Valeant/Ipsen) contains besides the 150 kD neurotoxin a different set of bacterial proteins. Apart from the 150 kD neurotoxin, there are no other bacterial proteins present in Xeomin. Different technical processes are used for the manufacturing of the products: Botox is produced by vacuum drying leaving a thin film as the final product whereas Dysport and Xeomin are produced by lyophilisation. Xeomin has demonstrated the highest stability allowing storage at room temperature whereas Botox and Dysport must be stored in the refrigerator. All products show a similar spread from the injected muscle provided that the dose is equivalent and the injection conditions are similar. Thus, the profile of adverse events should be comparable. Several head-to-head studies have demonstrated a 1:1 ratio between Botox and Xeomin confirmed in a recent Consensus paper. Although numerous studies are published with different ratios for Botox: Dysport a fixed ratio is not determined, yet. The load of bacterial proteins was claimed to have an impact on the immunogenic potential of the products. But it is not the protein load per se, it is the presence of complexing proteins in Botox and Dysport which influences the risk of an immune reaction.

## Biography

Juergen Frevert graduated in chemistry and got his Ph.D. in Biochemistry at Philipps-University, Marburg, Germany. After a postdoctoral fellowship at the University of California, Berkeley, USA he had several research positions in biotech companies where he developed an artificial human skin for transplantation on chronic wounds and burn wounds. In cooperation with Merz Pharmaceuticals he developed the pure botulinum toxin. He is now head of botulinum toxin research of Merz Pharmaceuticals GmbH, Potsdam, Germany.

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