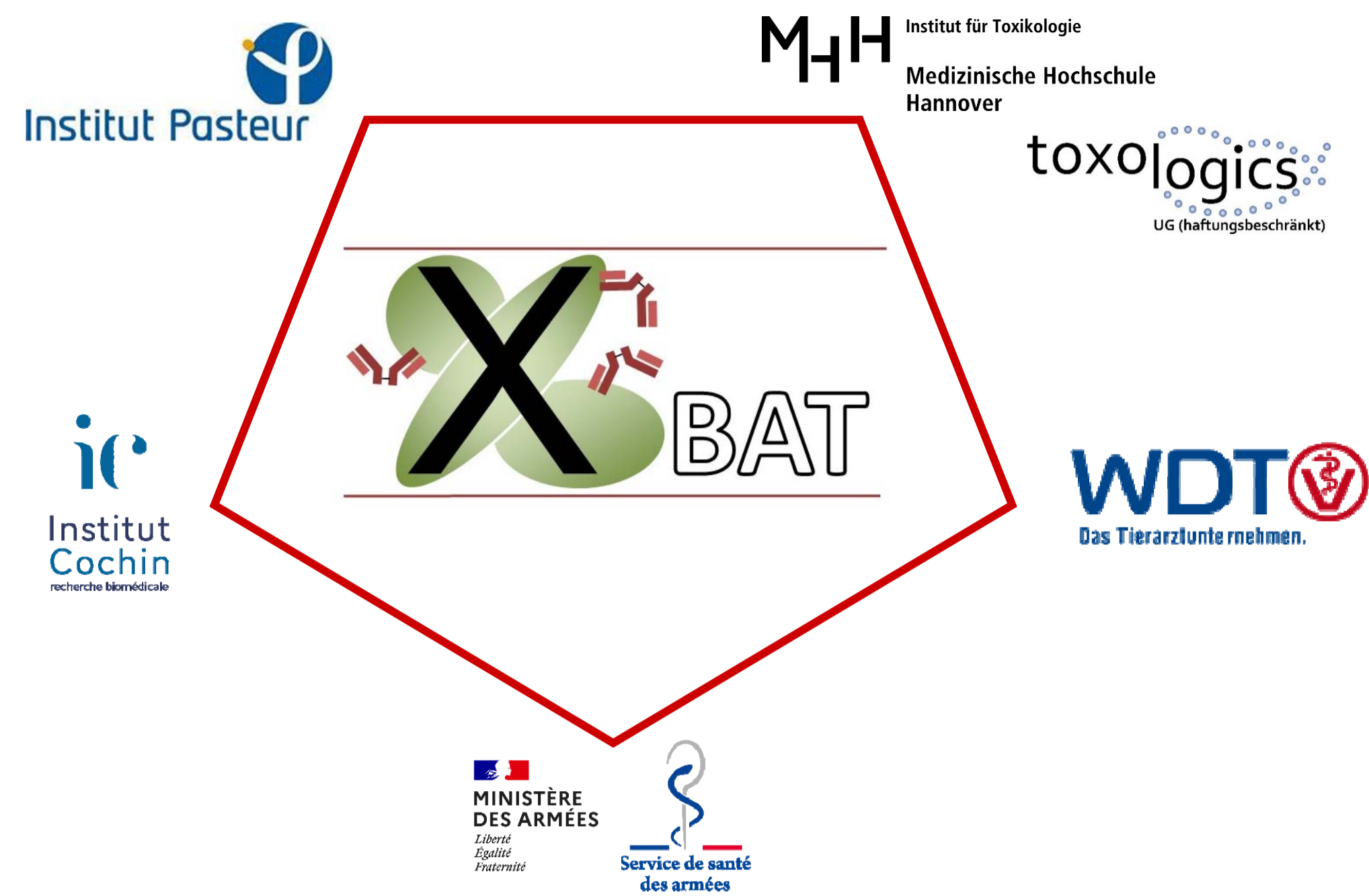


Generation of an equine decavalent botulism antitoxin (X-BAT) counteracting deliberate attacks with botulinum neurotoxin



The X-BAT consortium: Franco-German academic and industrial partner

Speaker/German coordinator:

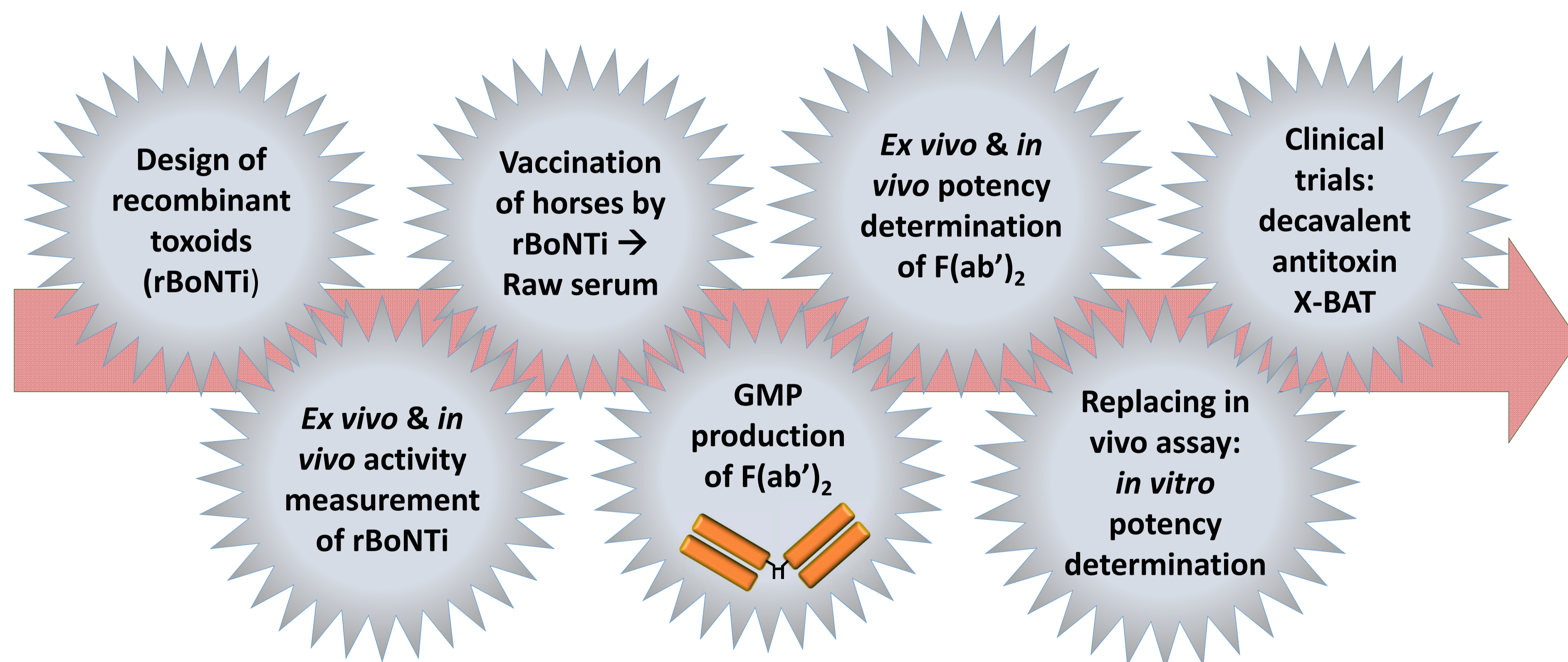
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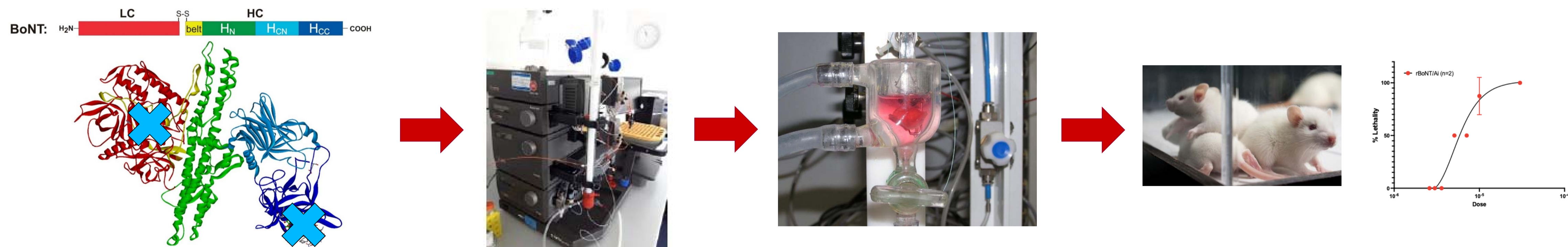
Abstract:

The Franco-German X-BAT consortium focuses on the research on and generation of an equine decavalent botulism antitoxin (X-BAT) counteracting deliberate attacks with all currently known botulinum neurotoxin types. By means of innovative antigen design and state-of-the-art production new routes in the generation of sufficient volumes of life saving BoNT antitoxin are explored. The consortium aims at providing a broadly available, EU-approved treatment of civilians and civil security forces upon deliberate BoNT intoxications.



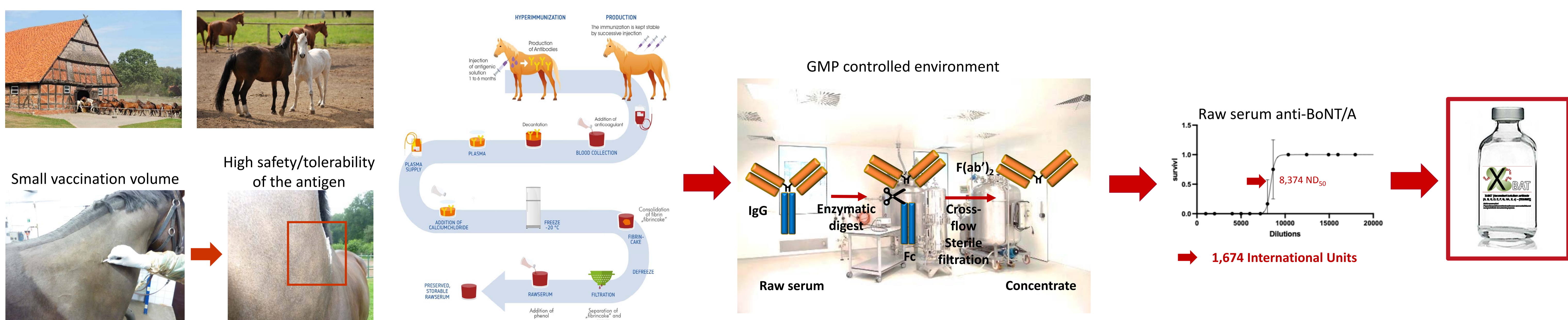
Innovative design and recombinant production of X-BAT toxoids: the rBoNTi antigens

- SAR-based design of 10 inactive BoNT serotype antigens (rBoNTi) maintaining native conformation
- Recombinant production of highly purified rBoNTi
- 3R-based screening of rBoNTi antigen candidates and pre-determination of residual activity by *ex vivo* mouse phrenic nerve hemidiaphragm assay replacing *in vivo* assays
- *In vivo* assessment of rBoNTi lead candidate for residual activity
- First data shows 1 million-fold reduced activity of rBoNTAi → **Highly safe antigen**



Generation of up to 10 monovalent BoNT-neutralising F(ab')₂ concentrates

- Vaccination of horses with rBoNTi antigens for production of BoNT-neutralising raw serum → Refined animal immunization including maximal biosafety for personnel
- Production of neutralising F(ab')₂ concentrate from raw serum in a GMP-controlled environment
- *In vivo* determination of BoNT neutralization activity of F(ab')₂ concentrate in IU according to European Pharmacopoeia



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