### Technical University of Denmark



### **Discovery of peptidic anti--myotoxins**

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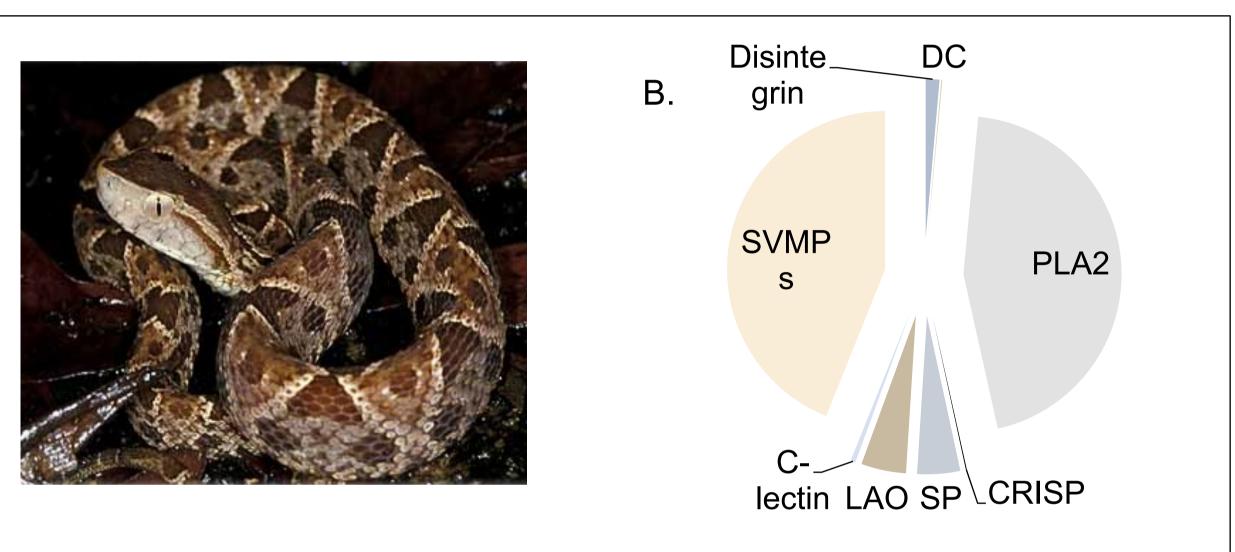
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# **Discovery of peptidic anti-myotoxins**

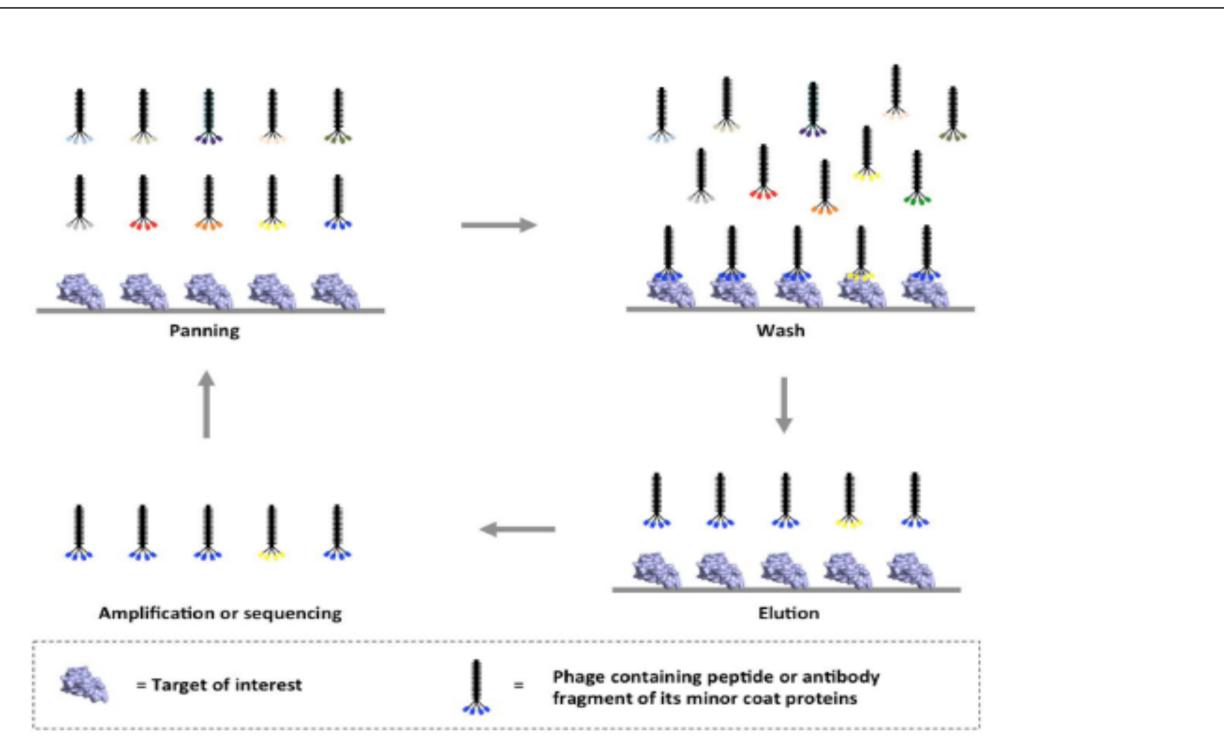
# Johanna Bjärtun<sup>1,2</sup>, Andreas H. Laustsen<sup>2</sup>, Andreas Munk<sup>3</sup>, Bruno Lomonte<sup>4</sup>, Brian Lohse<sup>2</sup>

More than 2.5 millions envenomations and 125.000 death occur each year due to snakebite [1]. Current antivenoms consist of immunoglobulines derived from animals, and they are therefore associated with a high risk of adverse reactions in humans [2]. The use of synthetic peptidic antitoxins may lead to safer and more effective antivenoms. This research reports the discovery of peptidic antitoxins against myotoxin II from *B. asper.* 

# Α.



myotoxic effects of the venom.



**Figure 2.** Phage display selection. Up to a billion different phages are tested for their ability to bind to the toxin. Unbound phages are washed away, bound phages are isolated, amplified, and sequenced [4]. Illustration borrowed from Laustsen AH., with permission.

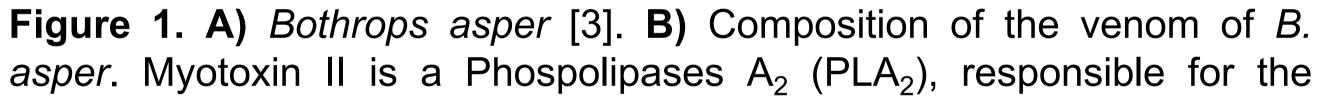
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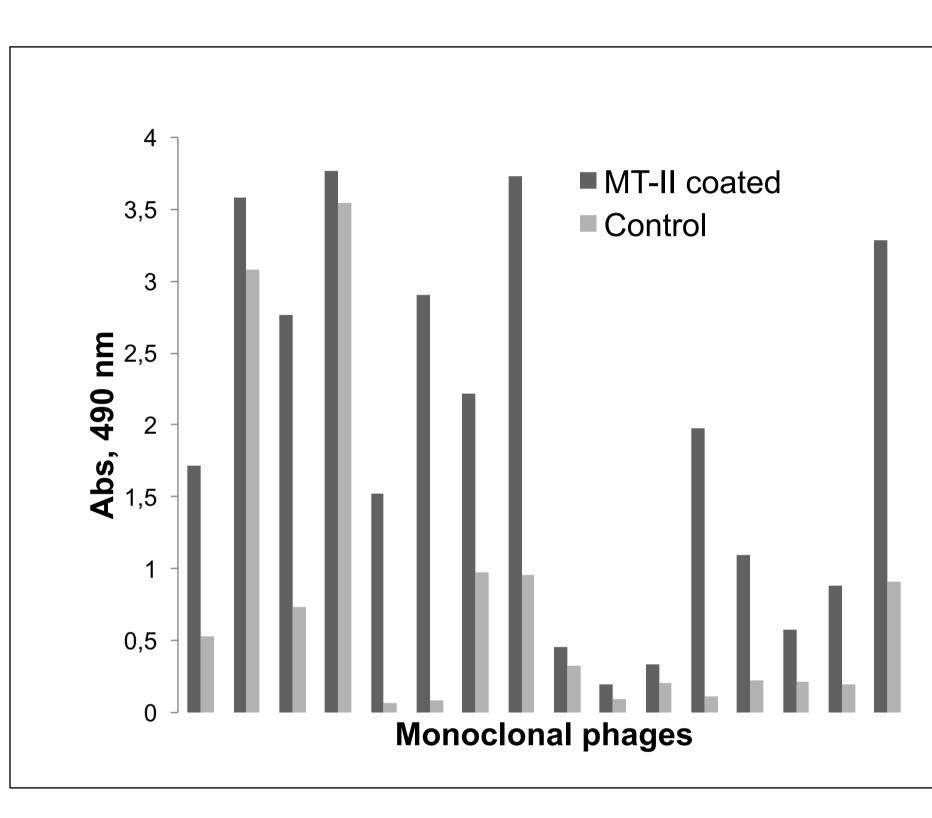
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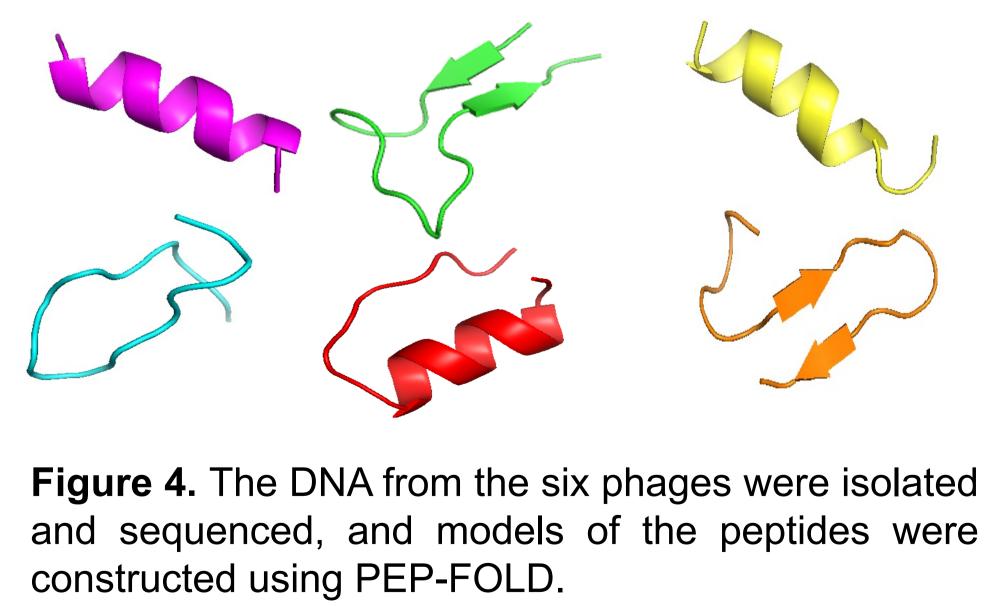
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## References

results of monoclonal The large phages. difference in absorbance between and control indicates that toxin the phages bind to myotoxin II. Six phages were identified as the most promising leads.

# Conclusion

Six peptides were discovered that binding to showed myotoxin II. Further work is required to determine binding affinity and inhibitory effect.

[1] Kasturirante et al., 2008. PLoS Medicine, 5(11), e218. [2] Gutiérrez et al., 2011. Biologicals, 39, 129-142. [3] Nationellt resurscentrum för biologi och bioteknik; <u>http://www.bioresurs.uu.se</u> [4] Laustsen et al., 2016. Submitted to Current Pharmaceutical Design.





