

Accepted Manuscript

Shark IgNAR-derived binding domains as potential diagnostic and therapeutic agents

Hanover Matz, Helen Dooley



PII: S0145-305X(18)30299-4

DOI: [10.1016/j.dci.2018.09.007](https://doi.org/10.1016/j.dci.2018.09.007)

Reference: DCI 3254

To appear in: *Developmental and Comparative Immunology*

Received Date: 7 June 2018

Revised Date: 19 August 2018

Accepted Date: 14 September 2018

Please cite this article as: Matz, H., Dooley, H., Shark IgNAR-derived binding domains as potential diagnostic and therapeutic agents, *Developmental and Comparative Immunology* (2018), doi: <https://doi.org/10.1016/j.dci.2018.09.007>.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Shark IgNAR-derived binding domains as potential diagnostic and therapeutic agentsHanover Matz¹ & Helen Dooley^{1*}

¹Dept. Microbiology & Immunology, University of Maryland School of Medicine, Institute of Marine & Environmental Technology (IMET), Baltimore, MD 21202. USA.

*corresponding author. Email hdooley@som.umaryland.edu

Abstract

Many of the most successful drugs generated in recent years are based upon monoclonal antibodies (mAbs). However, for some therapeutic and diagnostic applications mAbs are far from ideal; for example, while their relatively large size and inherent receptor binding aids their longevity in vivo it can also limit their tissue penetration. Further, their structural complexity makes them expensive to produce and prone to denaturation in non-physiological environments. Thus, researchers have been searching for alternative antigen-binding molecules that can be utilized in situations where mAbs are suboptimal tools. One potential source currently being explored are the shark-derived binding domains known as VNARs. Despite their small size VNARs can bind antigens with high specificity and high affinity. Combined with their propensity to bind epitopes that are inaccessible to conventional mAbs, and their ability to resist denaturation, VNARs are an emerging prospect for use in therapeutic, diagnostic, and biotechnological applications.

Keywords: shark, antibody, immunoglobulin, IgNAR, nanobody

Download English Version:

<https://daneshyari.com/en/article/11030782>

Download Persian Version:

<https://daneshyari.com/article/11030782>

[Daneshyari.com](https://daneshyari.com)