



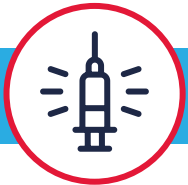
Program Pack

Lyme (mRNA-1975/82)

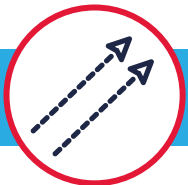
Moderna's first bacterial target will be Lyme disease



120,000 Lyme disease cases are reported each year in the US and Europe^{1,2}



No approved human vaccine currently on the market



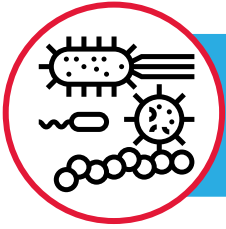
Moderna's strategy will involve development of two vaccine candidates in parallel

Our proposed seven-valent vaccine candidate is differentiated from competitive vaccines under development and will address Lyme's biological complexity, designed to potentially offer broader strain coverage

1. <https://www.cdc.gov/lyme/datasurveillance/surveillance-data.html>

2. Stone BL, Tourand Y, Brissette CA. Brave New Worlds: The Expanding Universe of Lyme Disease. Vector Borne Zoonotic Dis. 2017 Sep;17(9):619-629

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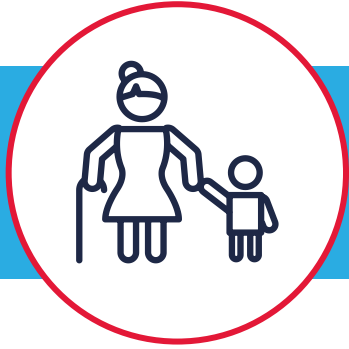


Bacteria are very complex organisms relative to viruses

- Each bacterium can contain thousands of possible antigens, making antigen targeting a challenge
- The immunologic potential of each antigen is difficult to decipher
- Bacteria can switch on and off the expression of certain antigens

Moderna's seven-valent approach to address Lyme may be an **effective way to elicit specific antibodies for almost all Lyme strains prevalent in the US and Europe**

Lyme is a major disease burden in the US and Europe with no currently approved human vaccine



Lyme follows a bimodal age distribution, affecting mainly children under 15 and older adults



US (35,000 cases/year) and Europe (85,000 cases/year) are the major Lyme geographies^{1,2}



Patients can develop rash, fever, headaches, fatigue, joint pain swelling, stiffness and headaches. Some of these symptoms can continue for six months or more.

1. <https://www.cdc.gov/lyme/datasurveillance/surveillance-data.html>

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Moderna's Lyme strategy targets key antigens

Antigen

7x serotypes (SR) of Outer surface protein A (OspA)

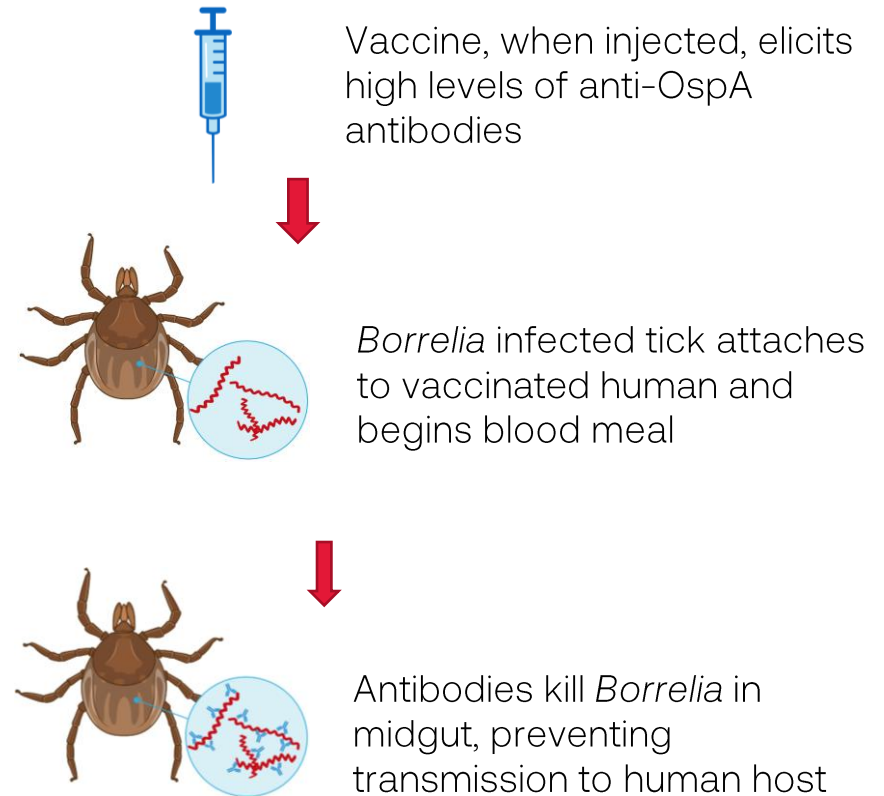
mRNA-1982

OspA SR1 elicits antibodies specific for *Borrelia burgdorferi*, which causes almost all the Lyme disease in the US

mRNA-1975

OspA SR1-7 elicits antibodies specific for the four major *Borrelia* species causing disease in US and Europe

Product concept: The OspA lipoprotein is a transmission blocking vaccine antigen



Forward-looking statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including regarding: the ability of Moderna's proposed seven-valent vaccine candidate to address Lyme's biological complexity and to potentially offer broader strain coverage; the potential for Moderna's mRNA technology to be an effective way to target bacterial antigens; expected market opportunity; and development candidate activities. In some cases, forward-looking statements can be identified by terminology such as “may,” “should,” “expects,” “intends,” “plans,” “aims,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” “continue,” or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. The forward-looking statements in this presentation are neither promises nor guarantees, and you should not place undue reliance on these forward-looking statements because they involve known and unknown risks, uncertainties and other factors, many of which are beyond Moderna's control and which could cause actual results to differ materially from those expressed or implied by these forward-looking statements. These risks, uncertainties and other factors include those described in Moderna's most recent Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission (SEC) and in subsequent filings made by Moderna with SEC, which are available on the SEC's website at www.sec.gov. Except as required by law, Moderna disclaims any intention or responsibility for updating or revising any forward-looking statements in this presentation in the event of new information, future developments or otherwise. These forward-looking statements are based on Moderna's current expectations and speak only as of the date referenced on the first page.