Antibody-based therapy against Streptococcus pneumoniae

Fact Sheet

Project Information

mABSPN

Grant agreement ID: 798032

Project website

DOI
10.3030/798032

Project closed

EC signature date
14 February 2018

Start date
15 June 2018

End date
14 June 2020

Funded under
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost
€ 165 598,80

EU contribution
€ 165 598,80

Coordinated by
UNIVERSITAIR MEDISCH CENTRUM UTRECHT
Netherlands

Objective

The pneumococcus (Streptococcus pneumoniae) is the predominant cause of community-acquired pneumonia and causes otitis media, sinusitis, meningitis and sepsis. The increased serotype replacement and antibiotic resistance, reinforces the necessity of developing alternative treatment strategies for this pathogen. Monoclonal antibodies that boost the host immune system are attractive candidates to fight the high rates of morbidity and mortality due to this important human pathogen. Antibodies recognizing bacterial surface structures could be used to trigger activation of the complement cascade and subsequent bacterial killing. However, no significant progress has been made in the direction of immune system

boosting therapies against pneumococci, mainly caused by our limited insights into antibody-driven immune activation on bacteria. With this proposal, I aim to study whether complement-enhancing monoclonal antibodies can be used as treatment against pneumococci. Through a combination of advanced sequencing approaches and functional complement activation assays, I will first identify antibodies against S. pneumoniae driving potent complement activation. Then I will use my expertise in S. pneumoniae infection models to unravel whether monoclonal antibodies eliciting complement are effective in pneumococcal killing in vitro and in vivo. The work proposed represents a first systematic approach to design effective therapeutic antibodies against S. pneumoniae that function via enhanced complement activation. Altogether, a better understanding of antibody-dependent complement activation on bacteria will create new avenues for the design of new therapeutic strategies to improve both antibody therapies and vaccination strategies in diseases caused by pathogenic bacteria.

Fields of science (EuroSciVoc)

medical and health sciences > clinical medicine > **pneumology**

social sciences > sociology > demography > **mortality**

natural sciences > biological sciences > microbiology > **bacteriology**

medical and health sciences > basic medicine > immunology > **immunotherapy**

medical and health sciences > basic medicine > pharmacology and pharmacy > drug resistance > **antibiotic resistance**

Programme(s)

H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions MAIN PROGRAMME

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

Topic(s)

MSCA-IF-2017 - Individual Fellowships

Call for proposal

H2020-MSCA-IF-2017

See other projects for this call

Funding Scheme

MSCA-IF-EF-ST - Standard EF

Coordinator

UNIVERSITAIR MEDISCH CENTRUM UTRECHT

Net EU contribution

€ 165 598,80

Total cost

€ 165 598,80

Address

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Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

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Permalink: https://cordis.europa.eu/project/id/798032