



COST Action CA16227
COST Association

COST Grant System
21 September 2017

Action CA16227 Fact Sheet

Title

Investigation and Mathematical Analysis of Avant-garde Disease Control via Mosquito Nano-Tech-Repellents

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Details

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Start of Action:	21/09/2017	Entry into force:	03/08/2017
End of Action:	20/09/2021	CSO approval date:	23/06/2017

Objectives

IMAAC aims at investigation and mathematical analysis of the effect of avant-garde control measures in vector-borne diseases involving day-time active mosquitos transmitting diseases like dengue, Zika, chikungunya and yellow fever. The control measures involve new technologies in textile and paint products based on nano- and micro-particles releasing repellents or pesticides in well portioned dosage. The study will also be expanded to scenarios using vaccines in combination with mentioned control techniques. The main focus will be on dengue fever transmitted via *Aedes aegypti* and *Aedes albopictus* mosquitoes in synergy with existing EU-projects, but the application will have also positive effects on other vector-borne diseases. Nano- and micro-particles are used in textile production for various purposes, and can be used to release chemicals like repellents and insecticides in a well-controlled rate. First attempts in this direction have been made, but no efficacy studies could be performed yet. The spectrum of combinations of nano- or micro-particles, repellents, insecticides and types of textiles (or paint) has not been well studied. Especially, efficacy studies in cases using these control measures in combination with vaccines are uncharted territories and mathematical modelling has to be developed. This Action aims to bring together experts from epidemiology, biostatistics, mathematics, biology, nano-technology, chemical and textile engineering to implement new techniques to combat mosquito transmitted vector-borne diseases. The key question remains, in how far such avant-garde measures can help to reduce the disease burden, eventually in collaboration with existing vaccines which turned out to have only limited efficacy on their own.



Parties							
Country	Date	Country	Date	Country	Date	Country	Date
Belgium	14/09/2017	Bosnia and Herzegovina	11/09/2017	Bulgaria	21/08/2017	Croatia	15/07/2017
Czech Republic	28/08/2017	Finland	13/09/2017	Germany	24/07/2017	Greece	12/09/2017
Italy	04/08/2017	Netherlands	04/09/2017	Poland	03/08/2017	Portugal	31/07/2017
Romania	03/08/2017	Serbia	02/09/2017	Spain	22/08/2017	United Kingdom	26/07/2017
fYR Macedonia	11/07/2017						

Total: 17

Intentions to accept the MoU							
Country	Date	Country	Date	Country	Date	Country	Date

Total: 0

Working Groups
None

Website
None

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GH Legal Representative	GH Manager/Administrator