

AGYA Project Partners



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About AGYA

The Arab-German Young Academy of Sciences and Humanities (AGYA) brings together excellent Arab and German scholars to address common challenges and develop solutions through sustainable research cooperation. It was established in 2013 as the first bilateral young academy worldwide.

AGYA promotes research cooperation among outstanding early-career researchers from all disciplines who are affiliated with a research institution in Germany or any Arab country. The AGYA members initiate and implement interdisciplinary projects and collaborative initiatives on research topics such as Arab and German Education; Common Heritage and Common Challenges; Energy, Water and Environment; Health & Society; Innovation and Transformation.

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New Interdisciplinary Directions in the Therapy of Covid-19 Through Nanomedicine

AGYA Tandem Project by Dr. Maha Nasr
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Nano-Natural Compounds for Treatment of COVID-19

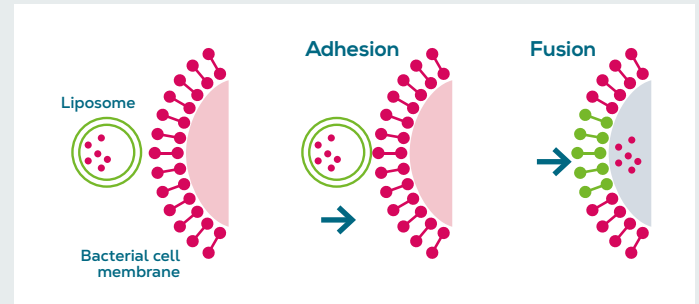
This interdisciplinary AGYA research project uses different types of therapeutic nanoparticles loaded with antiviral drugs to treat COVID-19 under laboratory conditions. The tandem project is innovative in both the use of nano-natural compounds and their delivery through vaporization. This novel approach allows direct therapy of the damaged tissue in the lung through inhalation of the particles.



Nanoparticles as a Trojan Horse

The nanoparticles used in this project are made of natural biodegradable lipids which are present in the cell membranes of our body. Therefore, they can easily enter the cell where they release the loaded compound.

In contrast, the compound without nanoparticles would be perceived by cells as a foreign particle, hence facing difficulties to enter the cells.



Conversion of the Nano-Natural Compound into a Pharmaceutical Product

The virus enters the body through the nose or mouth, and mainly affects cells that line the respiratory tract down into the lungs. Since the main cause of death of COVID-19 is the severe respiratory tract infections, the project focuses on customizing the nano-natural product into an inhalable delivery system which targets the deep lung, for effective treatment of respiratory symptoms.

