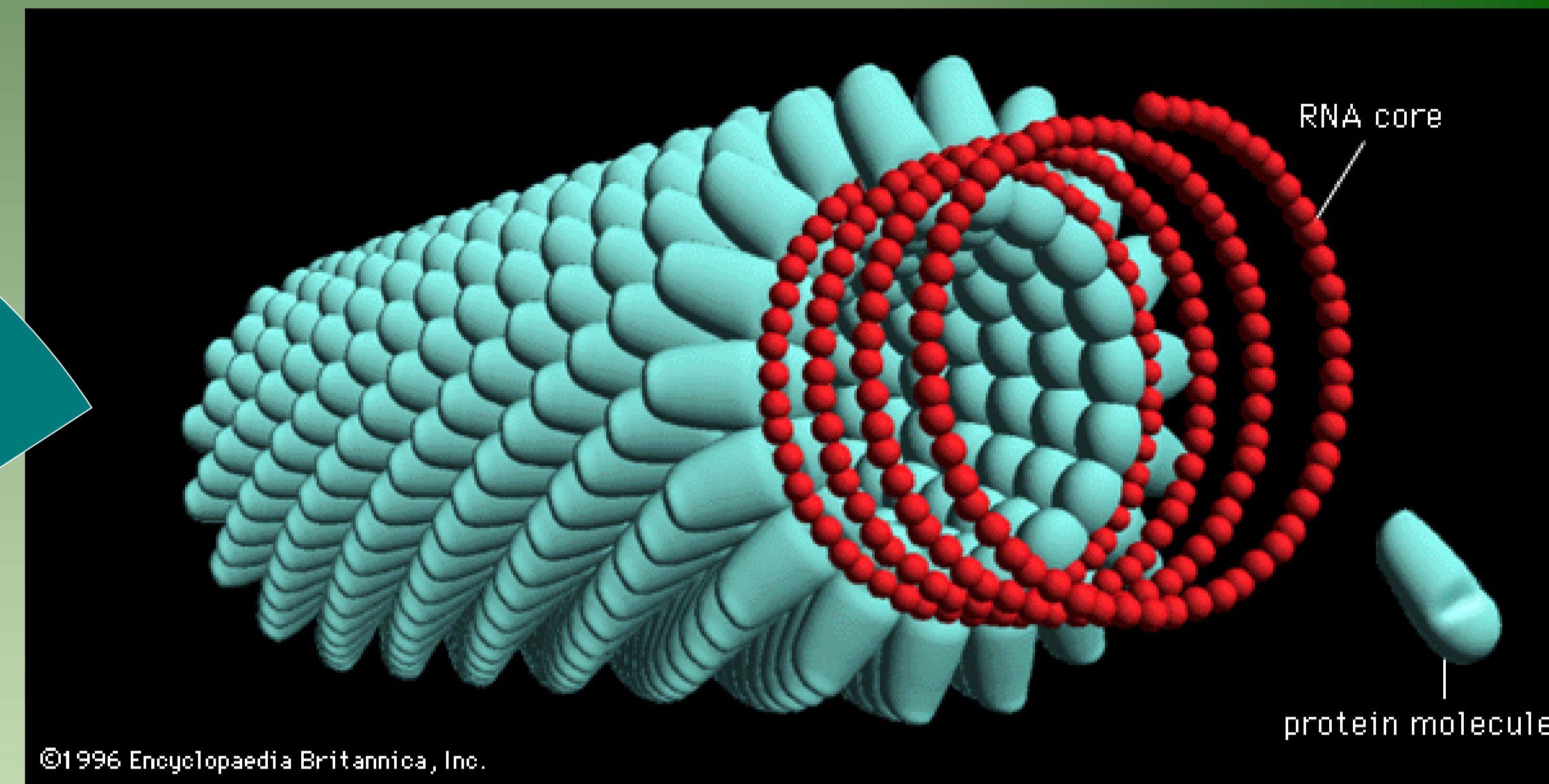
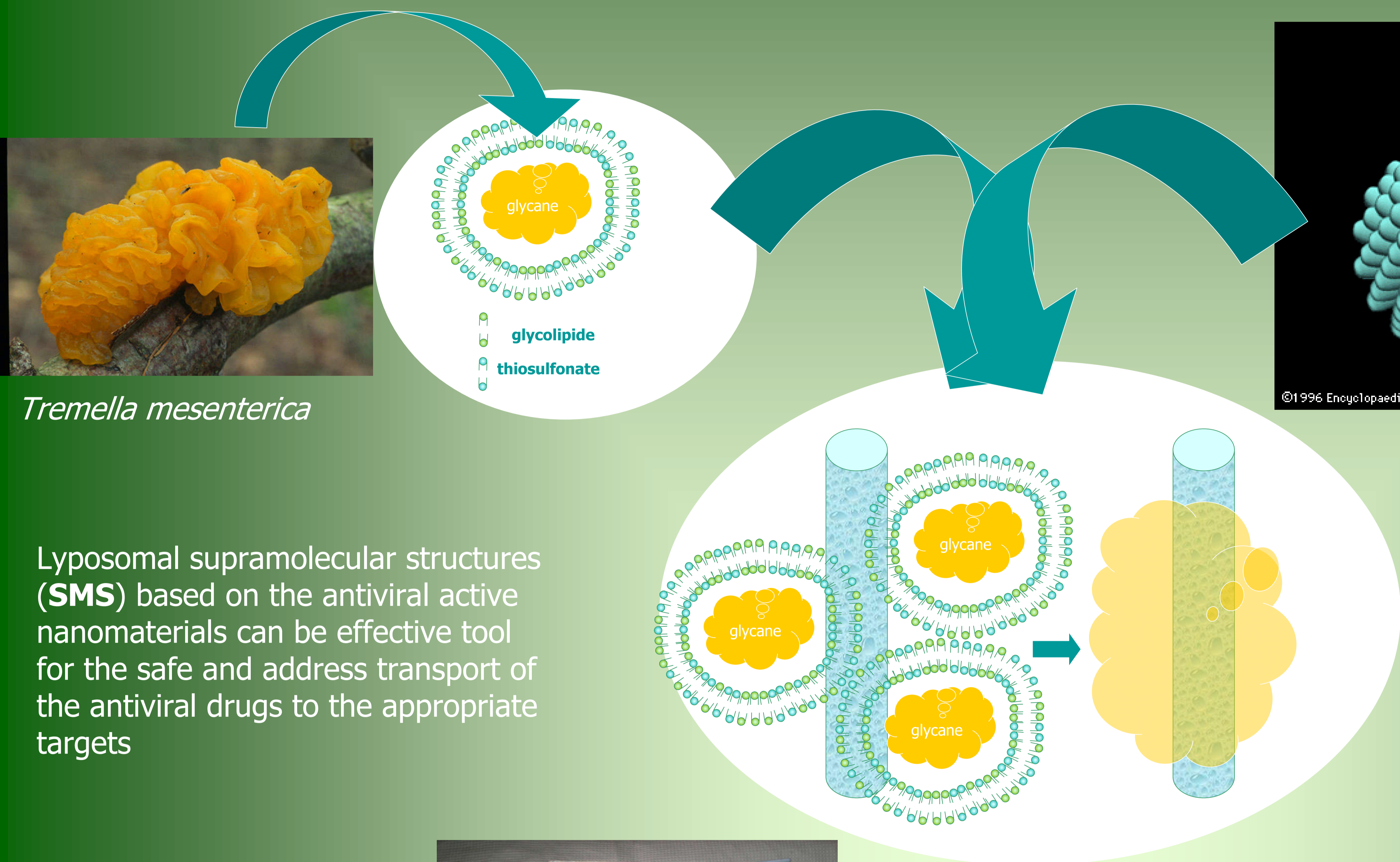


¹V.Ye. Lashkaryov Institute of Semiconductor Physics, NASU. Prospect Nauky 41, Kyiv-03039, Ukraine

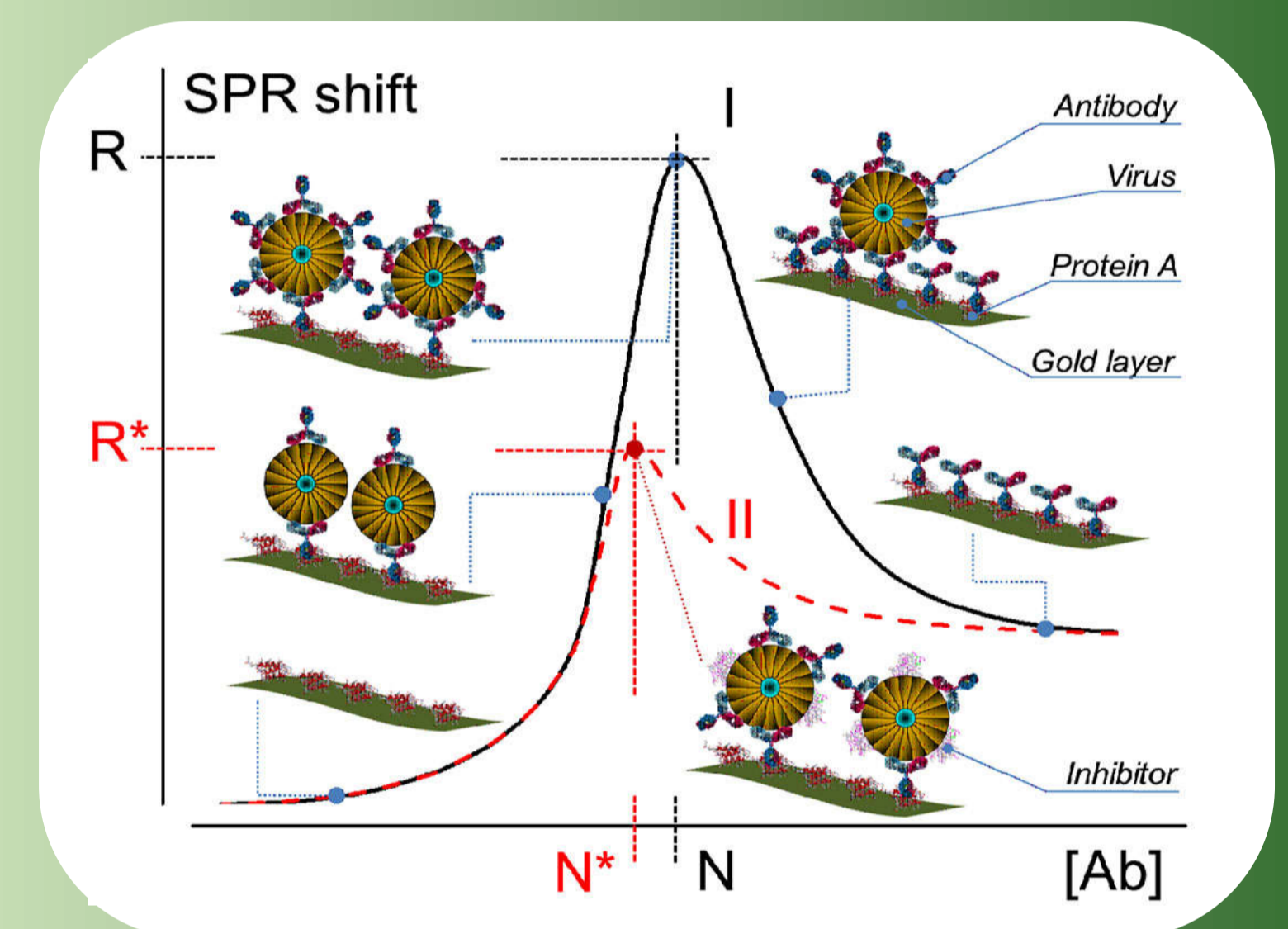
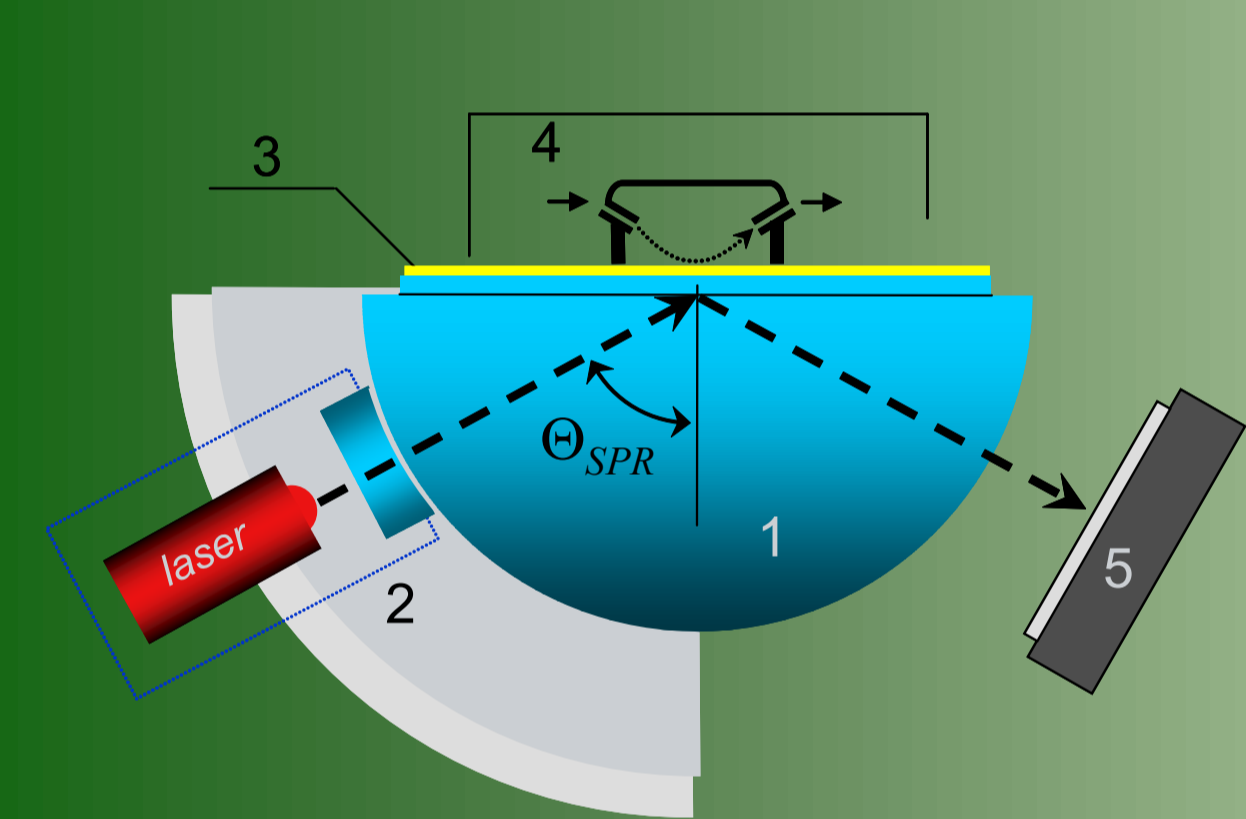
²D.K.Zabolotny Institute of Microbiology and Virology, Natl. Acad. of Sci. of Ukraine. Acad. Zabolotny str, 154, Kyiv-03680, Ukraine

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Liposomal supramolecular structures (SMS) based on the antiviral active nanomaterials can be effective tool for the safe and address transport of the antiviral drugs to the appropriate targets

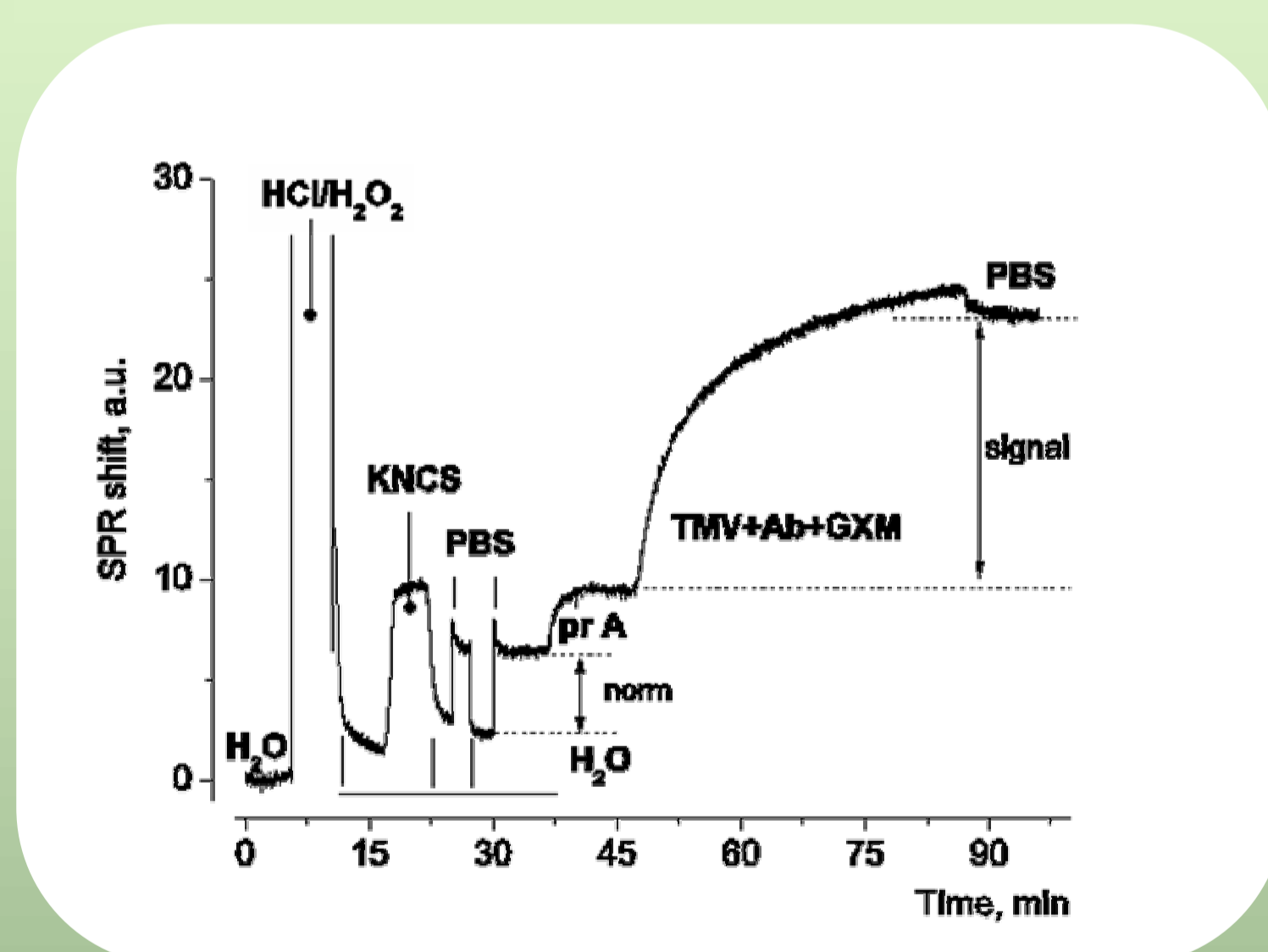
Tobacco Mosaic Virus (TMV) and its interaction with specific antibodies is useful model for the testing of the effectiveness of the liposome delivery of antiviral substances (namely glycans)



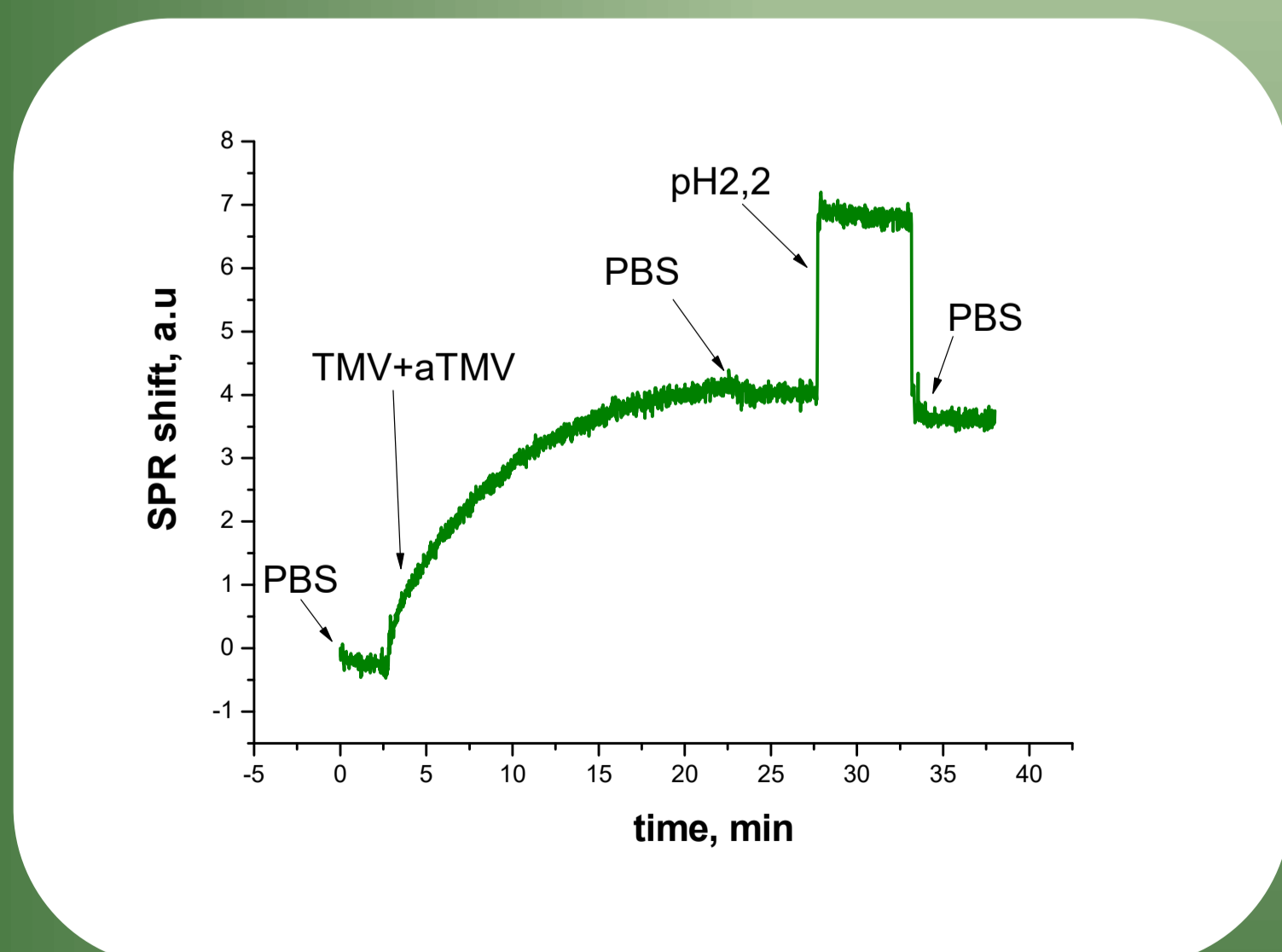
Scanning SPR spectrometer "BioHelper - 01" (V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences, Kyiv, Ukraine)

- 1 - glass prism
- 2 - mechanically scanning semiconductor laser $\lambda=650$ nm
- 3 - chip
- 4 - flow cell
- 5 - strip-line photodiode

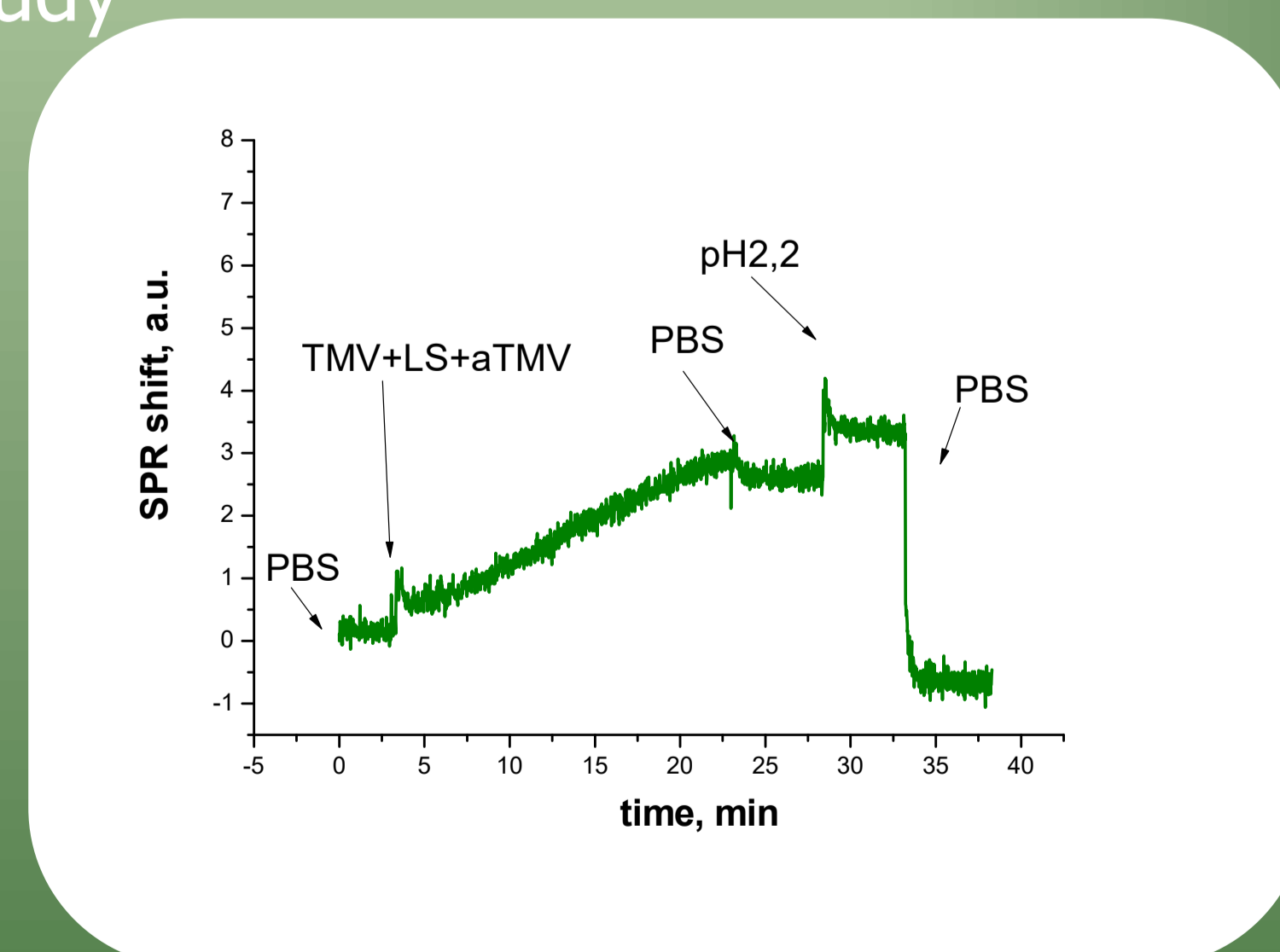
DViFA approach is based on the fact, that SPR shift depends not only on the layer thickness but on the change of refractive index within the layer as well. Therefore, variations of the molecular layer density also can affect the response value because of variations of the refractive index inside the layer.



General course of experimental study



(a)



(b)

Immobilization of the preincubated complex of TMV and specific antibodies in the **absence** (a) and in the **presence** (b) of the **glycan-containing liposomes**

The incubation of the untreated virus and the virus, preincubated with nanocomposite, with antibodies allows one to state the complexation with the nano-composite changes the binding capabilities of the virus which make it potentially useful as virus inhibitor