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## Cubosomes: liquid-crystalline nanoparticles as a potential bioimaging systems

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Cubosomes are liquid-crystalline nanoparticles. With two nonintersecting water channels, cubosomes possess plenty of advantages like enhanced stability, biocompatibility and presence of both hydrophilic and hydrophobic regions. According to that, cubosomes emerge as a great, potential systems for biomedical applications such as bioimaging or drug delivery. One of the main issues of investigations is determination of cytotoxicity in order to define the lethal concentration. In pursuance of defining the cytotoxicity, WST-1 and InCell assays on both MSU and HeLa cells have been conducted revealing modest differences between cell lines. To confirm the presence of cubosomes themselves Cryo TEM (Transmission electron microscopy) and SAXS (Small-angle X-ray scattering) approaches have been used. Next step of our investigations is functionalization cubosomes with graphene quantum nanodots and ZnCuInS/ZnS core/shell quantum nanodots and studies of their properties as potential bioimaging systems.

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### Biography

Jakub Jagielski is currently a PhD student in Nanobiomedical Centre of Adam Mickiewicz University in Poznan, Poland. He recently graduated from Poznan University of Life Sciences, where he had studied Biotechnology – specializing in Genetic Diagnostics. His Master's and Engineer thesis was completed at the Institute of Human Genetics, Polish Academy of Sciences, Poland. During his Master's and Engineer studies, he participated in several conferences, took part in Erasmus + Exchange, during which he had studied Medical Biotechnology at University of Padua, Italy. He had also been an Apprentice in The Maria Skłodowska–Curie Greater Poland Cancer Centre in Poznań, Poland and in Calouste Gulbenkian Foundation in Oeiras, Portugal. He currently broadens knowledge, focusing on biological aspects of cubosomes applications. Jakub He is an enthusiast of newest technologies and foreign languages.

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