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SYNTHESIS AND EVALUATION OF ANISOMELIC ACID LIKE COMPOUNDS FOR THE TREATMENT OF HPV-MEDIATED CARCINOMAS

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Human papillomavirus (HPV) infection is now a well-established cause of different types of cancer including but not limited to cervical cancer. There are currently no specific treatments for patients with HPV-driven cancers. One common denominator of the HPV genotypes is the E6 and E7 proteins, which are mainly responsible for malignant and non-malignant phenotypes. Hence, they represent valuable targets for therapeutic intervention in HPV-driven cancers. We have already successfully shown a natural diterpenoid, anisomelic acid (AA) down-regulates E6 and E7 oncoproteins, leading to efficient inhibition of cell growth and induction of apoptosis. During the optimization of AA synthesis, we have identified few small molecules, which preferentially targets the HPV E6 and E7 proteins similar to AA mode of action, but, more efficient than AA in inducing apoptosis in cervical cancer cells. Furthermore, these 'HIT' molecules also showed specificity in killing HPV positive cells with different genotypes compared with human primary skin fibroblast cells. Indeed, cancer xenograft models in nude mice demonstrated proof of principle, where a decrease in tumour size was observed in HPV-driven tumours treated with our HIT compound(s).

Biography

Yury Brusentsev obtained his Master's degree in Chemistry from Moscow State University in 2003. He worked as a Researcher in R&D (drug development) for Pharmaceutical industry until 2009 and moved back to academia and received his PhD in 2017, the group of Patrik Eklund at Abo Akademi University. Now he is carrying out chemistry part of the drug discovery projects (drug design and synthesis of drug candidates) as a Postdoc researcher. His research interests are in Medicinal Chemistry, Advanced Organic Synthesis and Organometallic Chemistry.

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