

Antonio Marchini

- PhD, 2000, Univ Heidelberg (Human Papillomavirus E7 oncoprotein);
- Post-doc, 2000-2006, Univ Heidelberg (Molecular basis of short stature syndromes);
- Group Leader 2006 – present, DKFZ (oncolytic parvovirus-based therapies).

Current Research

Our laboratory focuses on the development of novel strategies to treat cancer. We work on parvoviruses (PV), such as H-1PV and MVM, which are attractive agents for cancer therapy due to their apparent innocuousness in humans and their oncosuppressive properties. However, although parvoviruses replicate preferentially in cancer cells they can also infect normal tissues, and this sequesters a significant portion of the administered viral dose away from the tumor target. A second constrain is that these viruses are not always potent enough to arrest entirely tumour growth or cause a complete regression of neoplastic lesions. Using human papillomavirus (HPV) associated cervical carcinomas and gliomas as tumour models we are modifying these parvovirus to develop a new generation of viral vectors with high onco-specificity and onco-toxicity. We adopt many different strategies to achieve this, from arming the virus with additional oncolytic molecules to developing chimeric viruses or modifying their capsids for increased affinity to tumour cells.

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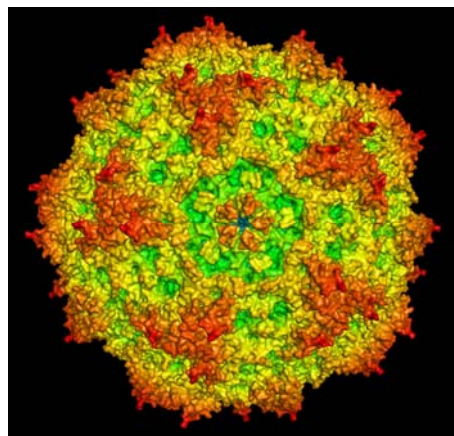


Future Projects and Goals

We will continue our research on the lines described before but are also starting novel projects at a more fundamental level. In collaboration with the IGBMC (FR), EMBL (DE) and Bioquant (DE), we will initiate an integrative biology research program which aims to characterize the early steps of infection of the H-1 oncolytic parvovirus using state of the art technologies such as high throughput siRNA library screening, ChIP on chip, microarrays and proteomics analysis. These studies will provide information essential to the understanding of the virus life cycle that we can further use in our PV-based anti-cancer strategies.

Selected Publications

My group has started working in the field of oncolytic viruses in mid 2006 and we are currently preparing 4 manuscripts on this area of research.



In silico model of H-1 parvovirus capsid (Allaume *et al.* manuscript in preparation).