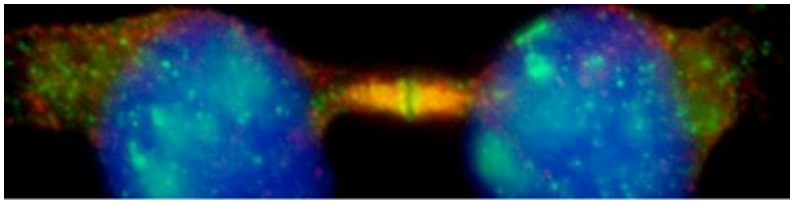
# Viral Oncology



Persistent viruses are pathogens that co-exist in balance with and for the life of their immunocompetent hosts, often without causing any symptoms. The delicate virus-host balance can be upset by perturbation of the immune responses, or through genetic or environmental factors.

It is hardly surprising, therefore, that persistent viruses are a major worldwide source of morbidity and mortality, responsible for diverse pathologies ranging from virus-associated cancers to life-threatening virus replicative infections. Viruses are estimated to be associated with the pathogenesis of 15-25% of all human cancers worldwide.

Aims of the Viral Oncology research theme are to understand better the virus:host balance which normally enables asymptomatic persistence, and to elucidate the molecular and cellular mechanisms by which tumour viruses cause malignant and non-malignant disease.Our research groups are studying 5 different viruses that cause cancer:

Open all sections

## Adenovirus...

- **Adenoviral replication and cellular transformation; use of adenovirus as a tool to explore fundamental cellular processes** (/research/activity/mds/domains/Cancer/viral-oncology/adenovirus-group/index.aspx) (**Dr R Grand** (/staff/profiles/cancer/grand-roger.aspx) , **Dr A Turnell** (/staff/profiles/cancer/turnell-andrew.aspx) )

## Epstein Barr Virus (EBV)...

- **The role of Epstein-Barr virus (EBV) in the pathogenesis of nasopharyngeal carcinoma (NPC) and a subset of gastric carcinomas.** (/research/activity/mds/domains/Cancer/viral-oncology/epstein-barr-virus-infection-and-pathogenesis-in-cancer-research/index.aspx) (Prof L Young, **Dr C Dawson** (/staff/profiles/cancer/dawson-christopher.aspx) )
- Epstein-Barr virus immunology and therapies (**Prof A Rickinson** (/staff/profiles/cancer/rickinson-alan.aspx) , **Dr G Taylor** (/staff/profiles/cancer/taylor-graham.aspx) , **Dr S Lee** (/staff/profiles/cancer/lee-steven.aspx) , **Dr A Hislop** (/staff/profiles/cancer/hislop-andrew.aspx) )
- **Pathogenesis of B cell lymphomas** (/research/activity/mds/domains/Cancer/viral-oncology/pathogenesis-of-b-cell-lymphomas/index.aspx) (**Prof P Murray** (/staff/profiles/cancer/murray-paul.aspx) , **Prof C Woodman** (/staff/profiles/cancer/woodman-ciaran.aspx) , **Prof Rowe** (/staff/profiles/cancer/rowe-martin.aspx) )
- **Epstein-Barr virus persistence and lymphomagenesis** (/research/activity/mds/domains/Cancer/viral-oncology/epstein-barr-virus-persistence-lymphomagenesis/index.aspx) (**Prof M Rowe** (/staff/profiles/cancer/rowe-martin.aspx) , **Prof A Rickinson** (/staff/profiles/cancer/rickinson-alan.aspx) , **Dr A Bell** (/staff/profiles/cancer/bell-andrew.aspx) )
- Mechanisms of EBV infection of different cell types and interaction with the host immune system (**Dr C Shannon-Lowe** (/staff/profiles/cancer/shannon-lowe-claire.aspx) , **Prof A Rickinson** (/staff/profiles/cancer/rickinson-alan.aspx) , **Prof M Rowe** (/staff/profiles/cancer/rowe-martin.aspx) )

## Human Papillomavirus (HPV)...

- **Understanding HPV molecular pathogenesis using cell-based models of the HPV life cycle and HPV associated carcinogenesis** (/research/activity/mds/domains/Cancer/viral-oncology/hpv-molecular-pathogeneses/index.aspx) . (**Dr S Roberts** (/staff/profiles/cancer/roberts-sally.aspx) )
- **Cellular pathways involved in maintaining host cell genome stability and long-term human papillomavirus (HPV) persistence.** (/research/activity/mds/domains/Cancer/viral-oncology/human-papilomavirus/human-papillomavirus.aspx) (**Dr J Parish** (/staff/profiles/cancer/parish-jo.aspx) )
- **Virus induced epigenetic reprogramming by HPV and EBV** (/research/activity/mds/domains/Cancer/viral-oncology/epigenetic-reprogramming-research/index.aspx) (**Prof Woodman** (/staff/profiles/cancer/woodman-ciaran.aspx) , **Dr P Kearns** (/staff/profiles/cancer/kearns-pamela.aspx) )



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