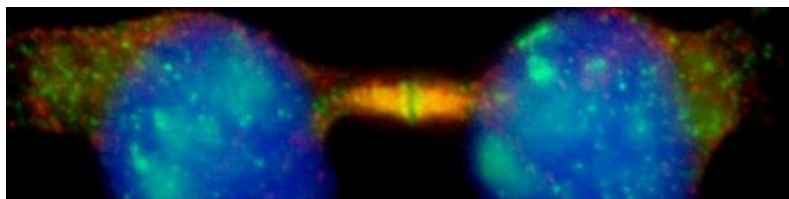


Viral Oncology



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:

Adenovirus...

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- **[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)** (</research/activity/mds/domains/Cancer/viral-oncology/adenovirus-group/index.aspx>) ([Dr R Grand](/staff/profiles/cancer/grand-roger.aspx) (</staff/profiles/cancer/grand-roger.aspx>), [Dr A Turnell](/staff/profiles/cancer/turnell-andrew.aspx) (</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)** (</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) (</staff/profiles/cancer/dawson-christopher.aspx>))
- Epstein-Barr virus immunology and therapies ([Prof A Rickinson](/staff/profiles/cancer/rickinson-alan.aspx) (</staff/profiles/cancer/rickinson-alan.aspx>), [Dr G Taylor](/staff/profiles/cancer/taylor-graham.aspx) (</staff/profiles/cancer/taylor-graham.aspx>), [Dr S Lee](/staff/profiles/cancer/lee-steven.aspx) (</staff/profiles/cancer/lee-steven.aspx>), [Dr A Hislop](/staff/profiles/cancer/hislop-andrew.aspx) (</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)** (</research/activity/mds/domains/Cancer/viral-oncology/pathogenesis-of-b-cell-lymphomas/index.aspx>) ([Prof P Murray](/staff/profiles/cancer/murray-paul.aspx) (</staff/profiles/cancer/murray-paul.aspx>), [Prof C Woodman](/staff/profiles/cancer/woodman-ciaran.aspx) (</staff/profiles/cancer/woodman-ciaran.aspx>), [Prof Rowe](/staff/profiles/cancer/rowe-martin.aspx) (</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)** (</research/activity/mds/domains/Cancer/viral-oncology/epstein-barr-virus-persistence-lymphomagenesis/index.aspx>) ([Prof M Rowe](/staff/profiles/cancer/rowe-martin.aspx) (</staff/profiles/cancer/rowe-martin.aspx>), [Prof A Rickinson](/staff/profiles/cancer/rickinson-alan.aspx) (</staff/profiles/cancer/rickinson-alan.aspx>), [Dr A Bell](/staff/profiles/cancer/bell-andrew.aspx) (</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) (</staff/profiles/cancer/shannon-lowe-claire.aspx>), [Prof A Rickinson](/staff/profiles/cancer/rickinson-alan.aspx) (</staff/profiles/cancer/rickinson-alan.aspx>), [Prof M Rowe](/staff/profiles/cancer/rowe-martin.aspx) (</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)** (</research/activity/mds/domains/Cancer/viral-oncology/hpv-molecular-pathogeneses/index.aspx>) ([Dr S Roberts](/staff/profiles/cancer/roberts-sally.aspx) (</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-papillomavirus/human-papillomavirus.aspx)** (</research/activity/mds/domains/Cancer/viral-oncology/human-papillomavirus/human-papillomavirus.aspx>) ([Dr J Parish](/staff/profiles/cancer/parish-jo.aspx) (</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)** (</research/activity/mds/domains/Cancer/viral-oncology/epigenetic-reprogramming-research/index.aspx>) ([Prof Woodman](/staff/profiles/cancer/woodman-ciaran.aspx) (</staff/profiles/cancer/woodman-ciaran.aspx>), [Dr P Kearns](/staff/profiles/cancer/kearns-pamela.aspx) (</staff/profiles/cancer/kearns-pamela.aspx>))