

# The different virus-cell interactions

## 1- Productive interactions

It corresponds to the complete multiplication cycle of the virus and the release of new virions by the cell. The cell in which the virus multiplies is called a permissive cell.

## 2- Abortive interaction

The viral genome has entered the cell but cannot express itself normally because the host cell prevents the execution of the viral cycle. We talk about non-permissive cells.

## 3- Integrative interactions

The viral genome enters the cell's nucleus without fully expressing itself. Under certain conditions, there will be activation of the productive cycle.

## 4- Persistent interaction

Although infected by the virus, the cell continues to multiply normally while producing viral particles. A regulatory mechanism prevents the extension of viral syntheses within the cell.

## 5- Cellular transformation (transforming interaction)

The viral genome is present in the host cell (free or integrated into the DNA). The expression of certain viral oncogenic genes (v-onc) gives cells growth and immortality properties analogous to those of cancerous cells. The viral genome (without v-onc) can also integrate near a cellular gene (c-onc) and activate it.

**NB: A virus can be lytic in some cells and oncogenic in other cells where its genome persists: this is the case with HBV, HPV, and EBV viruses.**