

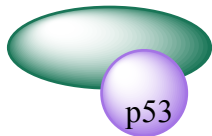
CONCEPT: TUMOR VIRUSES

- There are many **oncogenic viruses** that cause _____
 - Some viruses integrate into the host cell genome, which can be harmful
 - Other viruses have proteins which interfere with normal cell functions
 - Block tumor suppressor activities
 - Interfere with cell cycle control (increase) and apoptotic (decrease) mechanisms
 - Overtake the cell replicative machinery to replicate its genome

Virus	Cancer
Hepatitis B/C	Liver cancer
Papillomavirus	Cervical cancer and head, neck, throat cancer
Herpesviruses	Kaposi's Sarcoma
Retroviruses	Kaposi's Sarcoma (AIDS)

EXAMPLE:

HPV E6 protein



p53 tumor suppressor
destruction

HPV E7 protein



Rb tumor suppressor
inhibition

PRACTICE:

1. True or False: Many viruses can cause cancer.
 - a. True
 - b. False
2. Which of the following viruses can cause head, neck, and throat cancer?
 - a. Hepatitis B
 - b. Human Papillomavirus
 - c. Herpesvirus
 - d. Retroviruses