

# New Material

DNA Replication; Cell Cycle; Cancer

*Cancer*

# Ras: Oncogene Activation via Point Mutation

- discovered as **oncogene** in a retrovirus
  - also discovered as **oncogene** in human tumors via gene transfer
- mutations that activate Ras = located @ AA 12, 59, & 61
  - these positions contact phosphate of GTP
  - activated **Ras mutants** have decreased GTPase
  - thus, cannot turn self off → signal continues → gives too much growth signal
- oncogene** activation results from mutation of specific sites in specific proteins

