A hybrid gene is a gene that is formed by the fusion of two or more separate genes, either through a chromosomal rearrangement or through the integration of a retrovirus into the host genome. This can result in the production of a fusion protein that combines the functions of the original proteins, or in the disruption of the normal regulation of gene expression.

Hybrid genes can have a variety of effects on an organism's biology, depending on the specific genes that are involved and the nature of the fusion event. Some hybrid genes may be harmless or even beneficial, while others may cause disease or lead to the development of cancer.

In the context of cancer, hybrid genes are often associated with chromosomal translocations that occur in cancer cells. These translocations can lead to the formation of fusion proteins that drive tumor growth and progression. Examples of hybrid genes that are involved in cancer include the BCR-ABL fusion gene in chronic myeloid leukemia, and the EML4-ALK fusion gene in non-small cell lung cancer.