

# **Introduction to Bioorganic Chemistry and Chemical Biology**

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Receptor tyrosine kinases signal growth via a MAP kinase cascade	425	Pentameric Cys-loop receptors are gated by neurotransmitters	449
Many signal transduction pathways involve abundant small molecules and scarce proteins	426	The nicotinic acetylcholine receptor is a popular target for toxins	450
Receptor tyrosine kinases turn on calcium signaling pathways via phospholipase C	428	Tetrameric glutamate receptors are defined by their specificity for glutamate analogs	451
Receptor tyrosine kinases broadcast both proliferative and anti-apoptotic signals via Akt	429	<b>9.8 TRIMERIC DEATH RECEPTORS</b>	<b>451</b>
The differences between various receptor tyrosine kinase pathways are less important than the similarities	430	Tumor necrosis factor binding to TNF receptors triggers diverse, cell-dependent responses	451
Chemical methods for isolation and identification of kinase substrates	430	<b>9.9 PATHWAYS CONTROLLED BY SMALL DIFFUSIBLE GAS MOLECULES</b>	<b>453</b>
<b>9.6 G PROTEIN-COUPLED RECEPTORS</b>	<b>431</b>	Oxygen levels are monitored through HIF-1 $\alpha$	453
Seven-transmembrane domain G protein-coupled receptors can respond to a wide range of ligands with high dynamic range	431	A nitric oxide receptor induces the production of cGMP	454
		<b>9.10 SUMMARY</b>	<b>455</b>
		<b>PROBLEMS</b>	<b>456</b>