

**TABLE 465e-2 INITIAL ACTIONS OF DRUGS OF ABUSE**

Drug	Neurotransmitter Affected	Drug Target (Action)
Opiates	Endorphins, enkephalins	$\mu$ - and $\delta$ -opioid receptors (agonist)
Psychostimulants (cocaine, amphetamine, methamphetamine)	Dopamine	Dopamine transporter (antagonist—cocaine; reverse transport—amphetamine, methamphetamine)
Nicotine	Acetylcholine	Nicotinic cholinergic receptors (agonist)
Ethanol	GABA	GABA <sub>A</sub> receptors (positive allosteric modulator)
	Glutamate	NMDA glutamate receptors (antagonist)
	Acetylcholine	Nicotinic cholinergic receptors (allosteric modulator)
	Serotonin	5HT-3 receptor (positive allosteric modulator)
	—	Calcium-activated K <sup>+</sup> channel (activator)
Marijuana	Endocannabinoids (anandamide, 2-arachidonoylglycerol)	CB <sub>1</sub> receptor (agonist)
Phencyclidine	Glutamate	NMDA glutamate receptor (antagonist)

identified a network of regulated cytokines in brain, and a role in regulation of alcohol consumption has been recently validated for several of them, including IL-6. A major focus of current research is to define the site and mechanism by which proinflammatory cytokines impair brain function to elicit a depressive episode or promote drug abuse.

### CONCLUSIONS

This brief narrative illustrates the substantial progress that is being made in understanding the genetic and neurobiologic basis of mental illness. It is anticipated that biologic measures will be used increasingly to diagnosis and subtype a psychiatric disorder and that targeted therapeutics will become available to treat them.