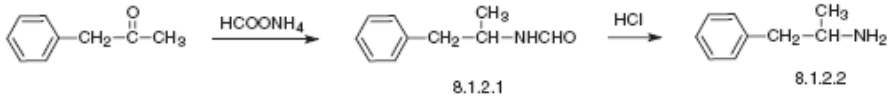
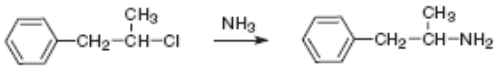
Dextroamphetamine: Dextroamphetamine, D-2-amino-1-phenylpropane (8.1.2.2), is synthesized by various methods. One of them consists of uses of the Leucart reaction, in particular, the reaction between methylbenzylketone and ammonium formate, giving the formamide (8.1.2.1), which is hydrolyzed to 2-amino-1-phenylpropane (8.1.2.2) by hydrochloric acid [1]. An analogous method has been suggested using formamide instead of ammonium formate [2].



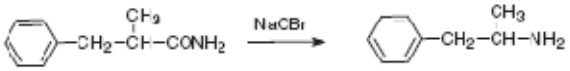
8.1.2.1 8.1.2.2

The other method consists of monoalkylation of ammonia using 2-chloro-1-phenylpropane [3].



8.1.2.2

2-Amino-1-phenylpropane (8.1.2.2) is also synthesized in a Hofmann reaction from α-benzylpropionic acid amide [4,5].



8.1.2.2

The product of either of the outlined methods, 2-amino-1-phenylpropane (amphetamine) is separated into isomers using D-tartaric acid, and separating the necessary dextroamphetamine, D-2-amino-1-phenylpropane (8.1.2.2) [6,7].

Dextroamphetamine is a powerful stimulant of the nervous system that manifests its effects by releasing dopamine and norepinephrine from presynaptic nerve endings, thus stimulating central dopaminergic and noradrenergic receptors. In certain doses it strengthens the excitatory process in the CNS, reduces fatigue, elevates mood and the capacity to work, reduces the need for sleep, and decreases appetite.

Dextroamphetamine should be used with caution and only upon medicinal indication in treating narcolepsy, consequences of encephalitis, and other illnesses accompanied by apathy, drowsiness, asthenia, for temporary increase of physical and mental capacity, in treating attention deficit disorder in children, and in treating obesity.Synonyms of this drug are D-amphetamine, dexamphetamine, dexalone, tempodex, zenidex, and many others.