
Desomorphine

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Desomorphine was discovered by L. Small in 1933. It became an alternative for the well known analgesic Morphine fast because of its greater potency and less side effects. In the ensuing years synthesis of the alkaloid was researched and improved. The Swiss pharmaceutical company Roche produced Desomorphine under brand name Permonid between 1940 and 1981. Due to recent drug abuse research on this substance has been intensified. [1, 3, 7]

— Synthesis of Desomorphin —

By catalytic hydrogenation of Morphine's C-7 double bond and subsequent defunctionalisation of C-6, Desomorphine is synthesized. Because of the two alcohol groups, the phenolic one has to be protected. When Codeine is used as precursor you have to demethylate Desoxycodeine. These two steps limit the yields to ca. 40 %. [1, 8]

— Drug effects of Desomorphine —

Taking Desomorphine causes euphoria as well as sedative and analgesic relief. Furthermore, it causes side effects such as respiratory and gastrointestinal problems and increased blood pressure. [2]

On the one hand it is unsure why Desomorphine is more potent than Morphine, on the other it is known that Desomorphine occupies the same opioid receptors as Endorphine. In comparison with Morphine, Desomorphine is faster reduced. It follows that it has to be taken more frequently to get the same effects. In addition, Desomorphine's withdrawal symptoms are up to three times longer than Morphine's. This leads to the conclusion that Desomorphine is more addictive. [4, 5, 6]

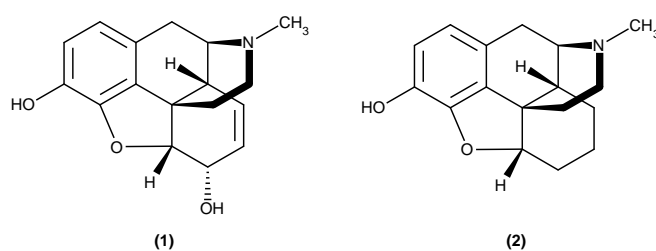


Figure 1: Structural similarities between Morphine (1) and Desomorphine (2) are remarkable. Desomorphine has no alcoholic group at C-6 und no double bond at C-7. Of course, the difference in effects stems from there.

— Drug abuse of Desomorphin —

Desomorphine is a principal component of the drug "crocodile" (other spelling: "Krokodil" is also common, the name of the drug stems from the appearance of addicts: their skin colour turns green around the injection side. Also the skin gets scale-like.). The drug spread due to it being cheaper than heroine in Russia in 2003. Eight years later there were approximately 100000 "crocodile" addicts in Russia. About the same time, "crocodile" was noticed as addition to heroine in Germany. The drug consumption by four addicts caused typical abuse side effects. [3, 9]

Because of the production conditions, there are residues of heavy metals, iodine and phosphorus in "crocodile". These substances cause further side effects like abscesses, thrombosis and decreasing cognitive perception. [3]

Hence, life span of an addict is estimated to be one to two year after first usage. [3]

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