

N-Acetyl-L-Tryptophan の毒性研究 (第 9 報)*

ラットにおける慢性毒性試験

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Toxicological Studies on N-Acetyl-L-Tryptophan IX

Chronic toxicity in rats

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Summary

N-Acetyl-L-tryptophan (Acetyl-L-Trp) was intraperitoneally administered to Wistar male rats at the doses of 300, 600 and 1,200 mg/kg/day for 14 weeks to clarify its chronic toxicity in comparison with that of L-Tryptophan (L-Trp) at the doses of 500 and 1,000 mg/kg/day.

In the rats administered Acetyl-L-Trp, there was no death even at the largest dose of 1,200 mg/kg/day, and no significant changes due to its administration were observed in body weight gain, food consumption, hematology, serum biochemistry, urinalysis, autopsy, organ weights and histopathological examination at any doses employed. On the other hand, administration of L-Trp at the dose of 1,000 mg/kg/day resulted in some deaths, piloerection, depressions of motor activity, body weight gain and food consumption as well as increases of water consumption and urine volume. In addition to these findings, increases of urea-N and serum glucose and decrease of NEFA were noted at the dose of 500 mg/kg/day or more, and, post-mortem and histopathological examinations revealed focal peritonitis in some rats given 1,000 mg/kg/day.

From these results, it was concluded that N-Acetyl-L-tryptophan was less toxic than L-Tryptophan and its maximum non-effective dose was over 1,200 mg/kg/day.

Key words

N-Acetyl-L-tryptophan, L-Tryptophan, Chronic toxicity, Rat

緒 言

手術後の異化期や経口摂取の不能時にはたん白質の

喪失があるために、窒素源の供給が必要であり、アミノ酸の補給は有効である。このアミノ酸の補給に際してはブドウ糖を供用すると相互に効率よく利用されるところから糖とアミノ酸の混合輸液の開発が望まれてきた。

ところが、ブドウ糖とアミノ酸の混合液が褐色に変化する¹⁾こともよく知られている。しかし、混合されるアミノ酸のうち L-Tryptophan (L-Trp) を栄養学的には L-Trp と等価である N-Acetyl L-Tryptophan

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