

Z401 Effects of ATP on the Stability of Soluble Proteins in the Pectoral Muscle of Neurotoxin 6-aminonicotinamide Treated Quail against the Proteolytic Digestion

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The effects of neurotoxin 6-aminonicotinamide (6-AN) on the stability of soluble proteins of quail muscle towards trypsin treatment were studied.

SDS-polyacrylamide electrophoresis showed that in the control group the soluble proteins with molecular masses corresponding to 130, 109, 96, 62 and 47 kDa were decreased whereas those with molecular masses 35.3, 34, 30, 28, 27, 21.7 and 19 kDa were increased. In 6-AN treated group the soluble proteins with molecular masses corresponding to 130, 96, 67, 60, 57, 50, 47, 36 and 32 kDa were decreased whereas those with molecular masses 30, 27, 26 and 18 kDa were increased. In the pair-fed, soluble proteins with molecular masses 130, 80, 76, 69, 59, 47, 35 and 28 kDa were decreased whereas those with molecular masses 28, 26 and 25 kDa were increased.

In the presence of 3 mM ATP, the soluble proteins with molecular masses in the control group corresponding to 112.8, 67.5, 57.7, 47, 23.9, 21.7 and 18 kDa were reinforced. In 6-AN treated group the soluble proteins with molecular masses 112.1, 60.3, 59.6, 34.7, 29, 22.8, 21.1 and 16.3 kDa were reinforced but a protein of 47 kDa was not recovered even in the presence of 3 mM ATP. In the pair-fed group the proteins with molecular masses 112.1, 97, 60.7, 57.8, 47, 35.9, 34.1 and 28 kDa were reinforced.

6-AN exerted some specific effects on the destabilization of a protein of 47 kDa.

Z402 Effects of the Shift of the Sleep-Wake Cycle on Circadian Rhythms: Melatonin, Thyroid-Stimulating Hormone and Body Temperature.

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Melatonin, TSH, and body temperature were measured in 4 subjects in altered sleep-wake cycle (sleep time: 0900-1700), over three consecutive days. Melatonin increased at night and the peak occurred after the onset of sleep. The levels declined through the night thereafter. TSH shows such a circadian rhythm as the melatonin rhythm. Upon the delayed shift of sleep-wake cycle the rhythms of melatonin and TSH were delayed in a similar manner concurrently. It is probable but uncertain that there is causal relationship between melatonin and TSH. The times of body temperatures, low during sleep and high during active period, correspond oppositely to melatonin or TSH levels. The body temperature rhythm shifted according to the altered sleep-wake cycle, but the rhythm was not reverse to melatonin or TSH rhythms, indicating that body temperature was controlled also by other factors.