E101 Effects of ATP on the Stability of Soluble Proteins in the Hind Limb of 6-Aminonicotinamide Treated Quail against Proteolytic Digestion.

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Treatment of quail with the 6-aminonicotinamide, an analog of nicotinamide, has been known to cause an irreversible rigid paralysis of the hind limbs. To understand the underlying mechanism of 6-AN in an irreversible rigid paralysis, we examined the stability of soluble muscle proteins from 6-AN treated, pair-fed, and control groups in the absence and presence ATP. The SDS-PAGE analysis of hind limb muscle proteins in the absence of 3 mM ATP following trypsin digestion showed that in the control group the soluble proteins with molecular masses corresponding to 155, 150.5, 110, 87, 80, 70, 61. 60 and 55.5 kDa were decreased whereas those with molecular masses and 33, 31 and 26 kDa were increased. In the 6-AN treated group the soluble proteins with molecular masses corresponding to 155, 87, 80, 70, 61, 60 and 55 were decreased whereas those with molecular masses 39, 33, 31 and 25 kDa were increased. In the pair-fed group, soluble proteins with molecular masses 155, 110, 87, 70, 61, 60.1, 55, 45 and 40 kDa were decreased whereas those with molecular masses 37, 33, 30 and 25 kDa were increased. In the presence of 3 mM ATP, the soluble proteins with molecular masses in the control group corresponding to 60, 49, 39, 33 and 31 kDa were reinforced. In 6-AN treated group, the soluble proteins with molecular masses 110, 80, 70, 60, 55, 49, 43 and 26 kDa were reinforced. In the pair-fed group, the proteins with molecular masses 59, 57, 41, 40, 35, 33, 32 and 30 kDa were reinforced. The results showed that 6-AN exerted specific destabilizing effects on proteins of molecular masses 110, 80, 70, 60, 55, 43 and 26 kDa. We believe that the reductions of these proteins may be associated with inducing rigid paralysis of hind limb.

E102 Purification and Substrate Specificities of Carboxylesterase from the Indian Meal Moth, *Plodia interpunctella*

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The carboxylesterases purified from the indian meal moth, *Plodia interpunctella* were examined to elucidate the substrate specificities. Three carboxylesterases (CE-III, CE-V and CE-VI) from the fifth instar larvae were purified by means of ammonium sulfate fractionation, ion exchange chromatography, gel permeation chromatography and electroelution. The V_{max} and K_m values of the carboxylesterases were varied by the reacted substrates as followings : the V_{max} of CE-III was 45.87 for α-Na, 52.63 for β-Na, 36.36 for α-Nb, 83.33 for β-Nb, and CE-V was 68.97 for α-Na, 82.64 for β-Na, 53.63 for α-Nb, 147.06 (μmol/min/mg protein) for β-Nb, whereas CE-VI exhibited 49.75 for α-Na, 62.50 for β-Na, 27.78 for α-Nb, 40.82(μmol/min/mg protein) for β-Nb : the K_m of CE-III was 1.43×10^{-4}M for α-Na, 3.57×10^{-5}M for β-Na, 9.17×10^{-5}M for α-Nb, 7.14×10^{-5}M for β-Nb, and CE-V was 1.67×10^{-4}M for α-Na, 5.88×10^{-5}M for β-Na, 1.01×10^{-4}M for α-Nb, 6.66×10^{-5}M for β-Nb, whereas those of CE-VI were 2.86×10^{-4}M for α-Na, 2.87×10^{-5}M for β-Na, 1.27×10^{-4}M for α-Nb, and 5.17×10^{-5}M for β-Nb, respectively.