**Title** Effect of gamma-irradiation on flavour 5′-nucleotides, tyrosine, and phenylalanine in mushrooms (*Agaricus bisporus*)

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**Abstract**

The impact of gamma-irradiation on 5′-nucleotides and on the free amino acids tyrosine and phenylalanine in fresh mushrooms was studied. After irradiation the samples were freeze-dried to avoid enzyme induced chemical changes. Three 5′-nucleotides could be detected using HPLC–UV and LC–ESI-MS: adenosine 5′-monophosphate (AMP), guanosine 5′-monophosphate (GMP) and guanosine 5′-diphosphate (GDP). Irradiation significantly reduced ($p = 0.05$) the GDP concentration (22%). AMP showed a marked reduction (46%) only at 5 kGy. GMP, tyrosine, and phenylalanine were not affected by gamma-irradiation.