
 NOTIZEN

**Nonenzymatic Catalysis by Metal Ions
and Phosphoric Acid Esters of
Hydroxamic Acid Formation.**
**Erratum: Transacylation via Acyl Phosphate
not Excluded**

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In [1] we have i. a. reported, that the catalysis by ATP and Be^{++} of hydroxamic acid formation from acetate and hydroxylamine, because of the apparent lack of concomitant liberation of inorganic phosphate, might not involve the intermediate formation of acetyl phosphate as earlier proposed by Lowenstein and Schatz [2].

As Dr. Mullins and Dr. Lacey [3] kindly informed us, the phosphate determinations in Fig. 2 in [1] referred to by asterisks in Table I [1] are in error because ATP interferes (probably by complex formation) with the extraction of phosphomolybdate

with isopropylacetate in the method of Wahler and Wollenberger [4], which we had applied for the determination of inorganic phosphate in the presence of bound phosphate.

Indeed, using more molybdate and perchloric acid (0.3 ml 1.2 M Na_2MoO_4 and 1.5 ml 1 M HClO_4 per 200 μl sample and extraction with 4 ml isopropyl acetate**) liberation of phosphate is easily demonstrated. It occurs even in the absence of acetate and is enhanced by its addition.

Thus, Lowenstein's hypothesis of nonenzymatic transphosphorylation involving acetyl phosphate is not excluded. Indeed, such transphosphorylations, and more generally [5-7], electron and group transfer reactions involving energy rich intermediates and specific catalytic effects of metal ions (and probably also specific metal complexes) may play a deciding role in the abiotic self-organization of matter if driven by an appropriate energy source as light [7] or redox reactions [5, 6] providing primary energy rich compounds.

** This modification of the Wahler and Wollenberger procedure also proved useful in screening for bound phosphate in the presence of a surplus of inorganic phosphate, which led us to the isolation of a phosphorylated compound obtained in high yield by oxidative or photo-oxidation of 2-methylimidazole [5].

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