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## Kinetic and chemical analyses of the cytokinin dehydrogenase-catalysed reaction

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*Published in:*  
Biochemical Journal

*DOI:*  
[10.1042/BJ20060280](https://doi.org/10.1042/BJ20060280)

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*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2006

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*Citation for published version (APA):*

Popelková, H., Fraaije, M. W., Novák, O., Frébortová, J., Bilyeu, K. D., & Frébort, I. (2006). Kinetic and chemical analyses of the cytokinin dehydrogenase-catalysed reaction: correlations with the crystal structure. *Biochemical Journal*, 398, 113 - 124. DOI: 10.1042/BJ20060280

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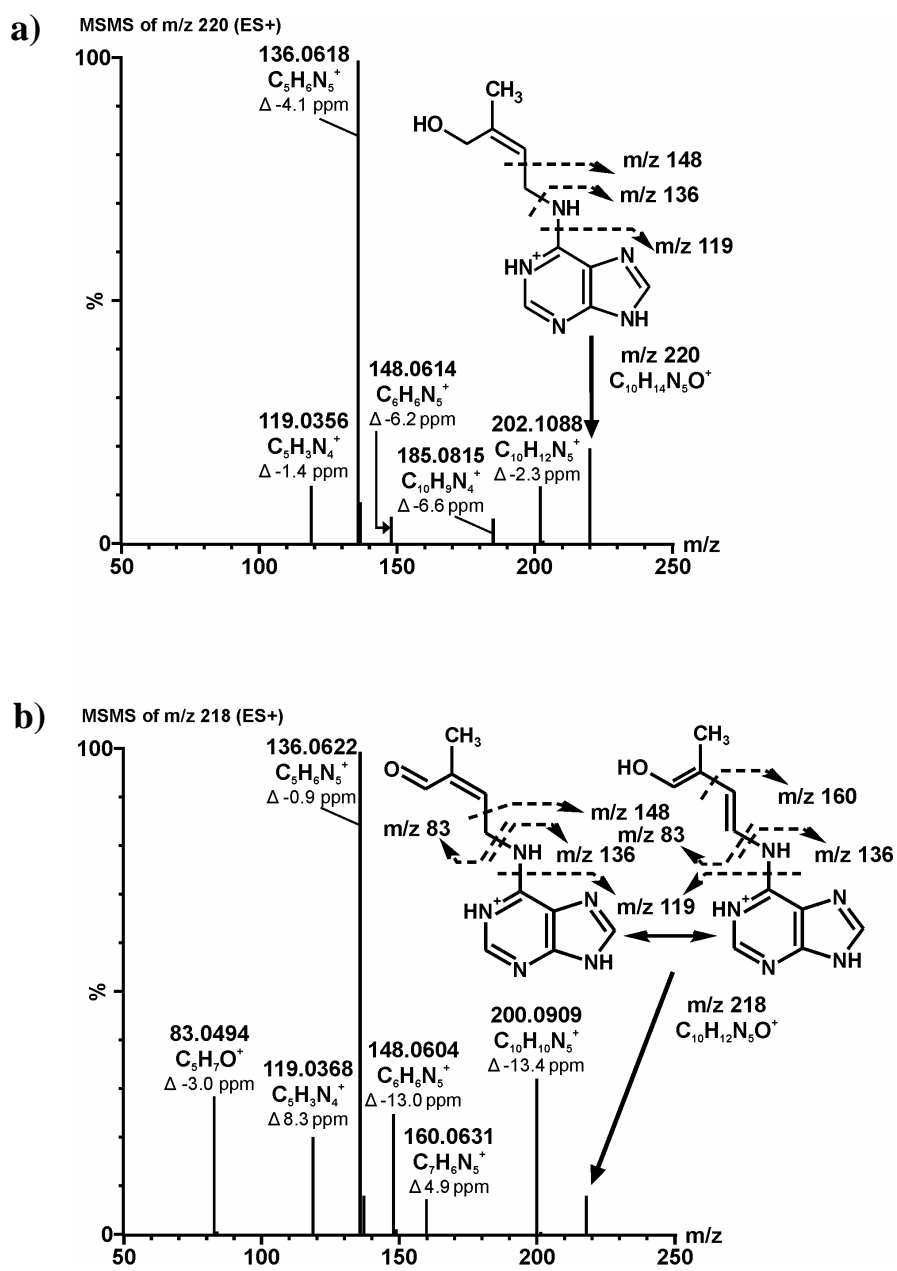
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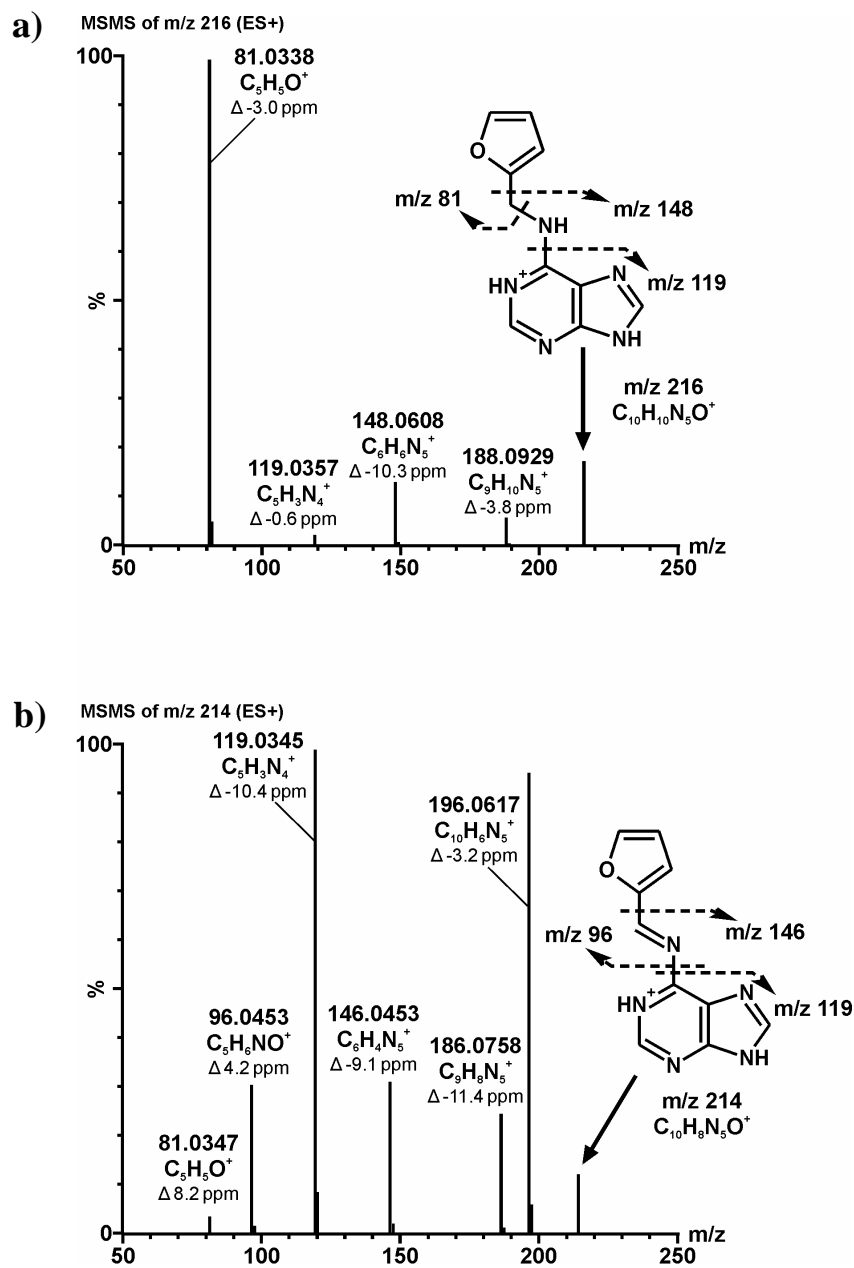
**Supplement 1 Absorption maxima and extinction coefficients of some cytokinins and cytokinin-derived aldehydes**

Absorption spectra were measured in 75 mM imidazole/HCl buffer, pH 6.5 and in 50 mM Tris/HCl buffer, pH 8.0. 3-Methyl-2-butenal, furfural and 4-hydroxybenzaldehyde are the products of enzymatic degradation of isopentenyladenine, kinetin and *p*-topolin, respectively.

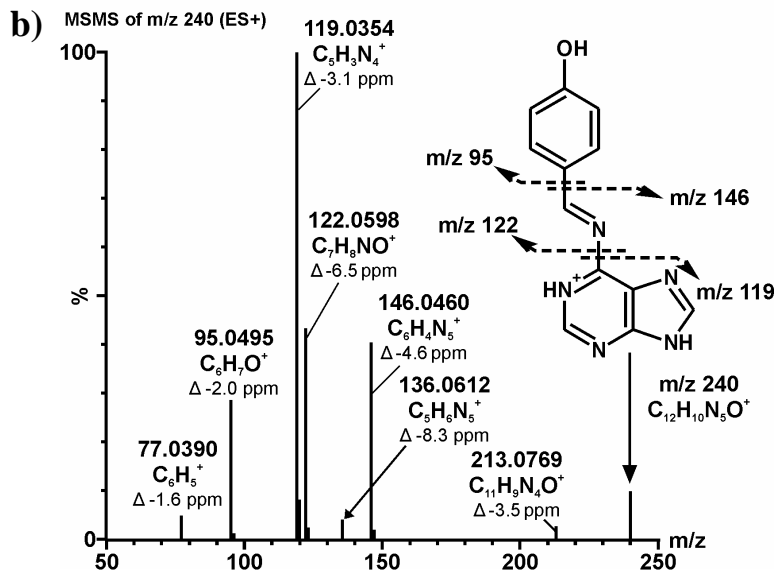
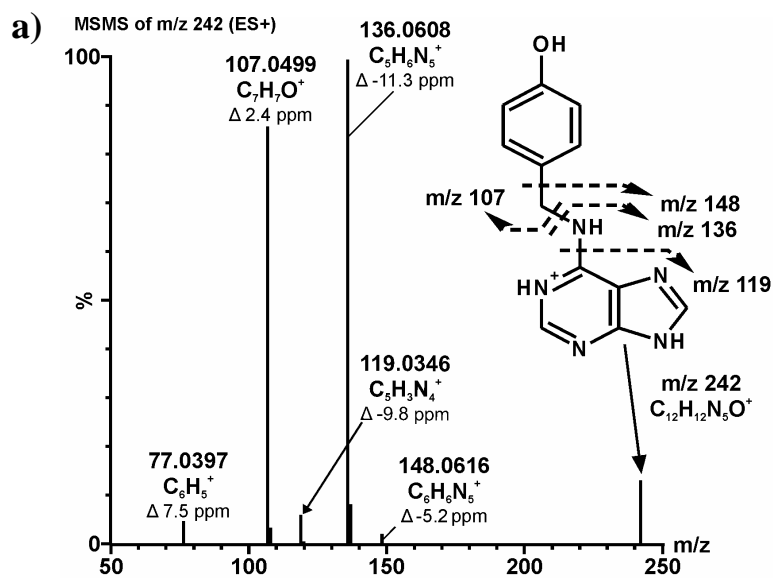
Compound	pH 6.5		pH 8.0	
	$\lambda_{\max}$ (nm)	$\epsilon$ ( $M^{-1}cm^{-1}$ )	$\lambda_{\max}$ (nm)	$\epsilon$ ( $M^{-1}cm^{-1}$ )
Isopentenyladenine	269.5	18200	269.0	17800
			223.5	32700
<i>p</i> -Topolin	269.5	19300	269.5	19700
			224.5	34000
3-Methyl-2-butenal	241.0	12400	241.0	12400
			219.0	33100
			219.0	32200
Furfural	277.0	15000	277.0	14500
			218.5	30200
4-Hydroxybenzaldehyde	327.0	2800	330.0	17900
	284.0	13900	293.0	7800
			219.0	31700



**Supplement 2 MS/MS analysis of ZmCKX1 (1.5  $\mu$ M) reaction with cytokinins: (a) *trans*-zeatin (50  $\mu$ M), (b) *trans*-zeatin[-2H] intermediate.**



**Supplement 3 MS/MS analysis of ZmCKX1 (1.5 μM) reaction with cytokinins: (a) kinetin (50 μM), (b) kinetin[-2H] intermediate.**



**Supplement 4 MS/MS analysis of ZmCKX1 (1.5  $\mu$ M) reaction with cytokinins: (a) *p*-topolin (50  $\mu$ M), and (b) *p*-topolin[-2H] intermediate.**