

CORRECTION

Influence of Incorporated Wild *Solanum* Genomes on Potato Properties in Terms of Starch Nanostructure and Glycoalkaloid Content, by Tiina Väänänen,* Teemu Ikonen, Veli-Matti Rokka, Pirjo Kuronen, Ritva Serimaa, and Velimatti Ollilainen. *J. Agric. Food Chem.* 2005, 53, 5313.

Incorrect standard curves for glycoalkaloid analysis by LC-ESI-MS were used in the original paper. Corrected curves (Figure 6) and glycoalkaloid concentrations (Tables 2 and 3; Figure 10) are given below. The purity of 90% for α -tomatine standard (containing dehydrotomatine) was determined from UV spectral data according to Ono et al. (1), and it was taken into account in the calculations. No changes in the discussion or conclusions published before are given.

Furthermore, in the original paper the recoveries for spiked glycoalkaloids in the solid-phase extraction procedure were calculated as in Kozukue et al. (2):

$$\text{recovery}(\%) = \frac{a}{b + c} \times 100$$

In this correction we calculated the recoveries according to IUPAC recommendations (3)

$$\text{recovery}(\%) = \frac{a - b}{c} \times 100$$

where a = total concentration of glycoalkaloid in spiked sample, b = concentration of endogenous glycoalkaloid, and c = spiked amount.

Generally, the calculations with the IUPAC method give lower recovery values than obtained with the first method. In this context, however, the corrected recovery percent for α -tomatine is higher than in our previous results because of the corrected standard curves (Table 1).

Table 1. Recoveries of the Glycoalkaloids and Aglycons from SCX Solid-Phase Extraction Cartridges^a

| added amount of each compound ($\mu\text{g}/5 \text{ mL}$ of extract) | recovery ^b (%) | | | | |
|--|---------------------------|---------------------|--------------------|-------------|------------|
| | α -solanine | α -chaconine | α -tomatine | demissidine | solasonine |
| 50 | 62 | >100 | 70 | 70 | 59 |
| 100 | 35 | 55 | 78 | 91 | 39 |
| 150 | 81 | 99 | >100 | 96 | 31 |
| mean | 59 | 91 | 83 | 86 | 43 |
| RSD(%) | 39 | 36 | 20 | 16 | 34 |

^a The leaf extracts of *S. tuberosum* cv. Pito were spiked with various amounts of GA and aglycone standards. ^b Mean of two determinations for each level and each compound.

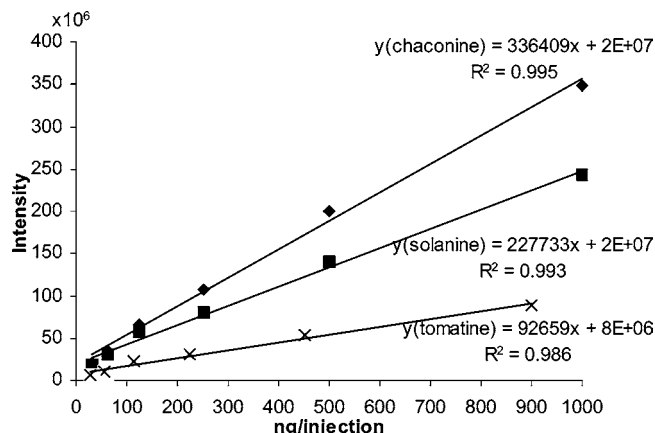


Figure 6. LC-ESI-MS standard curves of the glycoalkaloids α -solanine, α -chaconine, and α -tomatine used in the analysis of GAs in plant extracts.

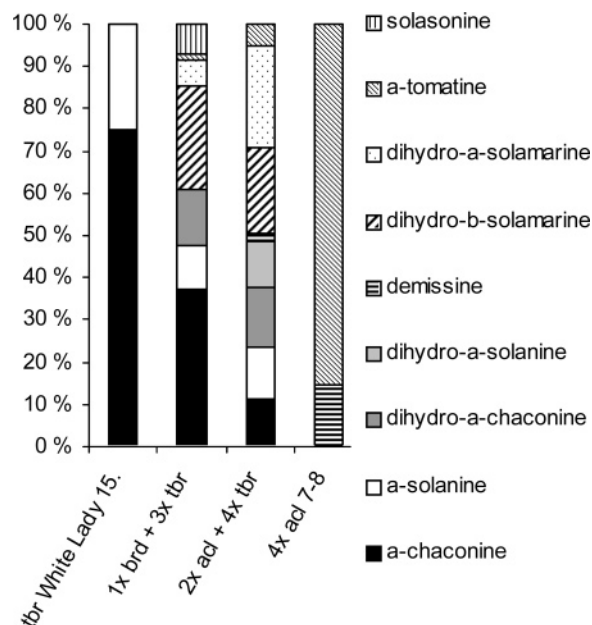


Figure 10. Proportions of different GAs detected in the tubers *S. tuberosum* White Lady 15 (*tbr*), the somatic hybrid of *S. brevidens* (*brd* + *tbr*), *S. acaule* (*acl* + *tbr*), and *S. acaule* (*acl*). Additional trace compounds are listed in Table 3. Total GA concentrations were 12 ± 1.5 , 13 ± 2.6 , 16 ± 4.5 , and $48 \pm 0.8 \text{ mg}/100 \text{ g}$ of FW, respectively.

Table 2. Glycoalkaloid Content of Foliage (Milligrams per 100 g of Fresh Weight \pm Standard Deviation) Determined Using LC-ESI-MS

| [M + H] ⁺ | t _R | compound ^b | plant type ^a | | | | |
|----------------------|----------------|----------------------------------|-------------------------|--------------|--------------------|---------------|--------------------|
| | | | 4x tbr Pito | 2x brd | (6x) 4xbrd + 2xtbr | 4xacl | (6x) 4xacl + 2xtbr |
| 1032.8 | 30.1 | 4 (dehydrotomatine) | — | 14 \pm 0.5 | + | — | — |
| 884.7 | 28.2 | 2 (solasonine)/ | 16 \pm 1.4 | — | — | — | — |
| | 31.0 | 5 (α -solamarine) | 9.0 \pm 1.5 | — | — | — | — |
| 868.9 | 28.3 | 3 (solamargine)/ | 79 \pm 2.4 | — | — | + | + |
| | | 6 (β -solamarine) | + | — | — | — | — |
| 1034.8 | 26.7 | 7 (soladulcine B) | — | — | + | 4.4 \pm 0.1 | — |
| | 29.6 | 10 (α -tomatine) | — | + | + | + | — |
| | 30.6 | | — | 518 \pm 16 | 45 \pm 12 | 17 \pm 0.9 | 62 \pm 4.6 |
| 886.7 | 26.7 | 8, 11 | — | — | + | — | — |
| | 29.5 | | — | — | + | — | — |
| | 30.4 | | — | — | 17 \pm 3.8 | — | 10 \pm 4.6 |
| | 31.5 | | — | — | 7.6 \pm 1.7 | — | — |
| 870.9 | 26.9 | 9, 12 | — | — | + | + | + |
| | 30.3 | | — | — | 9.6 \pm 1.6 | — | 32 \pm 11 |
| 1018.7 | 31.1 | 13 (demissine) | — | — | 6.5 \pm 2.9 | 5.6 \pm 1.7 | 14 \pm 2.6 |
| 870.9 | 30.9 | 14 | — | — | 2.2 \pm 0.2 | — | 19 \pm 2.1 |
| 854.8 | 31.8 | 15 | — | — | + | + | 41 \pm 4.4 |
| 1016.7 | 31.0 | 16 (dehydrodemissine) | — | — | — | — | — |
| 868.7 | 31.2 | 17 (α -solanine) | 311 \pm 19 | — | + | + | + |
| 852.8 | 31.4 | 18 (α -chaconine) | 498 \pm 44 | — | + | + | 2.3 \pm 0.6 |
| total | | | 893 \pm 39 | 532 \pm 16 | 88 \pm 21 | 26 \pm 3.5 | 180 \pm 25 |

^a +, detected; —, not detected. ^b Identification is based on the hypothesis that glycosides are solatriose, chacotriose, or lycotetraose.

Table 3. Glycoalkaloid Content of Tubers (Milligrams per 100 g of Fresh Weight \pm Standard Deviation) Determined Using LC-ESI-MS

| [M + H] ⁺ | t _R | compound ^b | plant type ^a | | | |
|----------------------|----------------|----------------------------------|-------------------------|----------------------|---------------|----------------------|
| | | | 2x tbr White Lady 15 | (4x) 1x brd + 3x tbr | 4x acl 7–8 | (6x) 2x acl + 4x tbr |
| 1032.8 | 30.1 | 1 / | — | — | — | — |
| | | 4 (dehydrotomatine) | — | — | — | 0.05 \pm 0.02 |
| 884.7 | 28.2 | 2 (solasonine)/ | — | — | — | — |
| | 31.0 | 5 (α -solamarine) | — | 0.9 \pm 0.1 | — | — |
| 868.9 | 28.3 | 3 (solamargine)/ | — | — | — | — |
| | | 6 (β -solamarine) | — | — | — | — |
| 1034.8 | 26.7 | 7 (soladulcine B) | — | — | — | — |
| | 29.6 | 10 (α -tomatine) | — | — | — | — |
| | 30.6 | | — | 0.2 \pm 0.05 | 41 \pm 0.3 | 0.9 \pm 0.1 |
| 886.7 | 26.7 | 8, 11 | — | — | — | — |
| | 29.5 | | — | — | — | — |
| | 30.4 | | — | 0.3 \pm 0.06 | — | 4.0 \pm 1.4 |
| | 31.5 | | — | 0.4 \pm 0.03 | — | — |
| 870.9 | 26.9 | 9, 12 | — | 3.1 \pm 0.8 | — | 3.4 \pm 0.9 |
| | 30.3 | | — | — | — | — |
| 1018.7 | 31.1 | 13 (demissine) | — | + | 6.9 \pm 1.0 | 0.3 \pm 0.1 |
| 870.9 | 30.9 | 14 | — | — | — | 1.8 \pm 0.3 |
| 854.8 | 31.8 | 15 | — | 1.7 \pm 0.4 | + | 2.4 \pm 0.6 |
| 1016.7 | 31.0 | 16 (dehydrodemissine) | — | — | + | + |
| 868.7 | 31.2 | 17 (α -solanine) | 2.9 \pm 0.7 | 1.3 \pm 0.2 | — | 1.2 \pm 0.6 |
| 852.8 | 31.4 | 18 (α -chaconine) | 8.6 \pm 0.8 | 4.8 \pm 1.0 | — | 1.9 \pm 0.6 |
| total | | | 12 \pm 1.5 | 13 \pm 2.6 | 48 \pm 0.8 | 16 \pm 4.5 |

^a +, detected; —, not detected. ^b Identification is based on the hypothesis that glycosides are solatriose, chacotriose, or lycotetraose.

LITERATURE CITED

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