



# Status of NIST Activities to Produce Standard Reference Materials for Dietary Supplements.

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The National Institute of Standards and Technology (NIST) has been working with the National Institutes of Health's Office of Dietary Supplements (NIH/ODS) and the Food and Drug Administration's (FDA's) Center for Drug Evaluation and Research and Center for Food Safety and Applied Nutrition to produce Standard Reference Materials (SRMs) for dietary supplements. A suite of SRMs for ephedra and a cod liver oil are now available. Suites of SRMs for ginkgo, saw palmetto, St. John's wort, green tea, bitter orange, black cohosh, and berries of several *Vaccinium* species are being prepared, and the status of activities relating to these materials will be reported. SRMs for these botanical dietary supplements will consist of suites of materials (plant, extract, and finished product). Multivitamin/multielement,  $\beta$ -carotene, and tocopherol SRMs are also in preparation. The dietary supplement SRMs are intended for the same purposes as other natural-matrix SRMs, namely: (1) to validate the accuracy and precision of new analytical methods, and (2) to provide quality control for analysis of similar materials.

EPHEDRA

- SRM 3240 *Ephedra sinica* Stapf Aerial Parts
- SRM 3241 *Ephedra sinica* Stapf Native Extract
- SRM 3242 *Ephedra sinica* Stapf Commercial Extract
- SRM 3243 Ephedra-Containing Powdered Solid Oral Dosage Form
- SRM 3244 Ephedra-Containing Protein Powder
- SRM 3245 Ephedra-Containing Dietary Supplement Suite



AVAILABLE

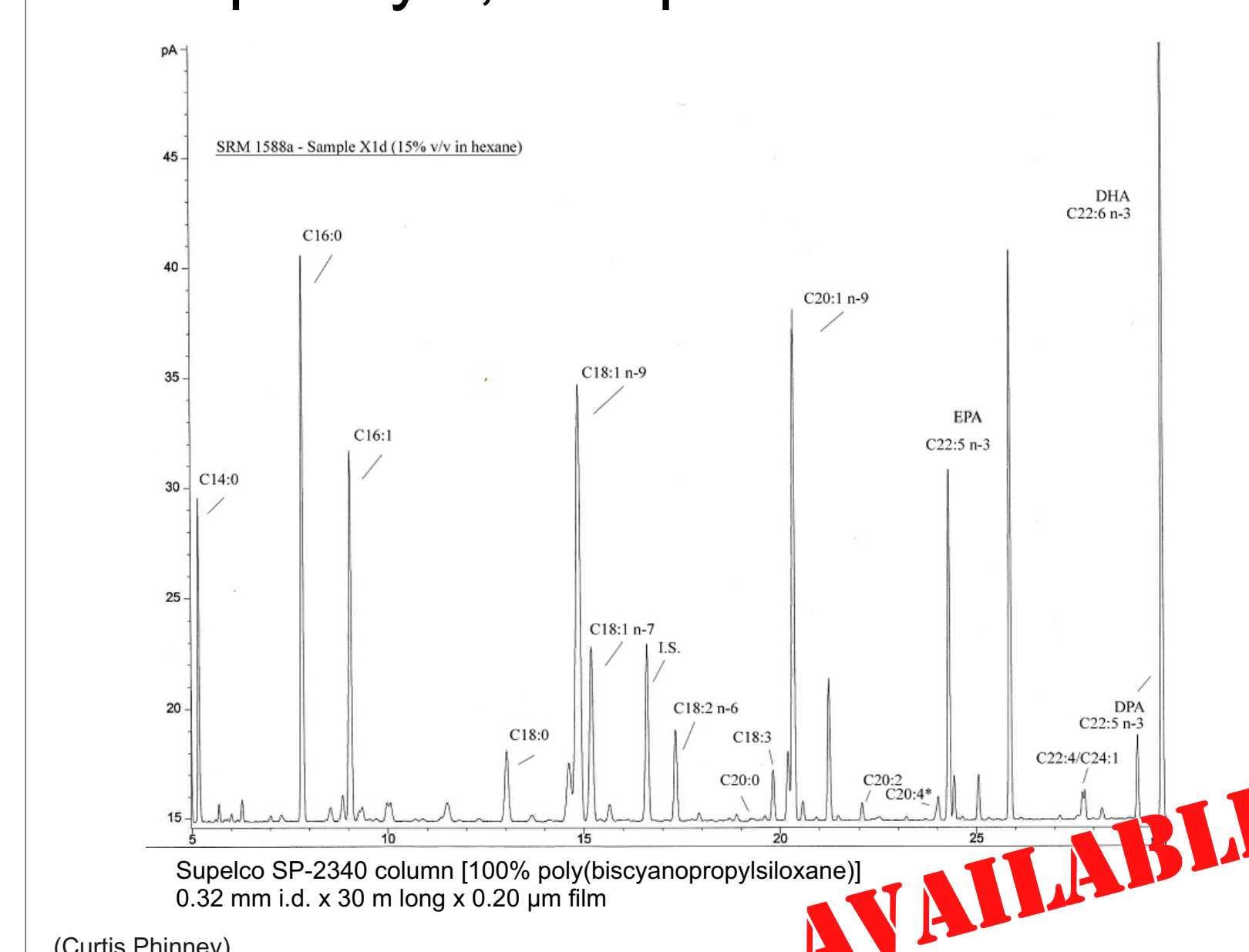
Assigned values provided for ephedrine alkaloids, toxic elements (As, Cd, Hg, Pb), caffeine, synephrine, and nutrients, as appropriate.

COD LIVER OIL

SRM 1588b  
Organics in  
Cod Liver Oil



Values assigned for individual fatty acids, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, and pesticides.

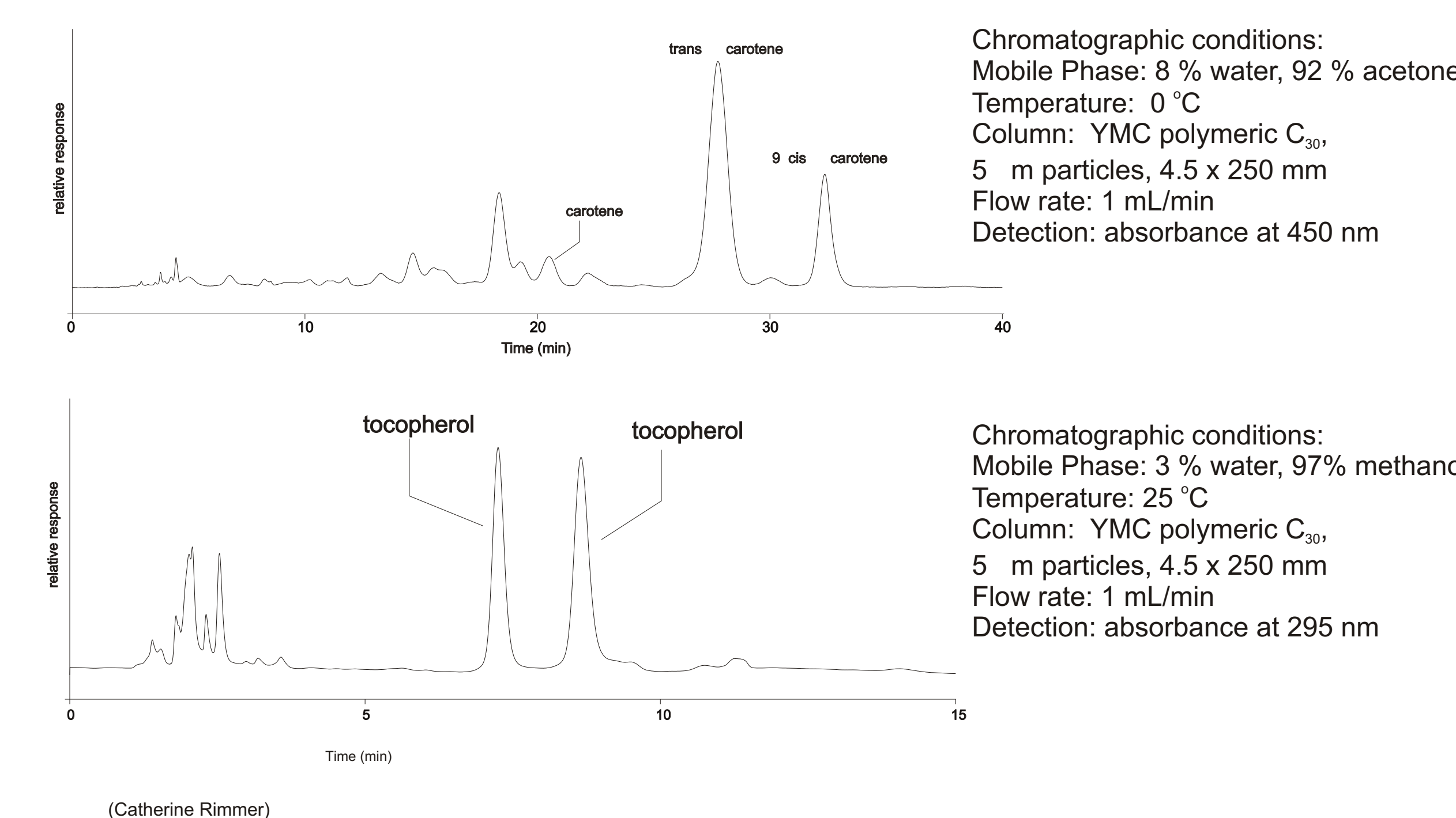


AVAILABLE

-CAROTENE



SRM 3276 Carrot Extract in Oil  
characterization for  $\beta$ - and  $\beta$ -carotene (*cis* and *trans* isomers) and tocopherols is completed. Certificate is in review.

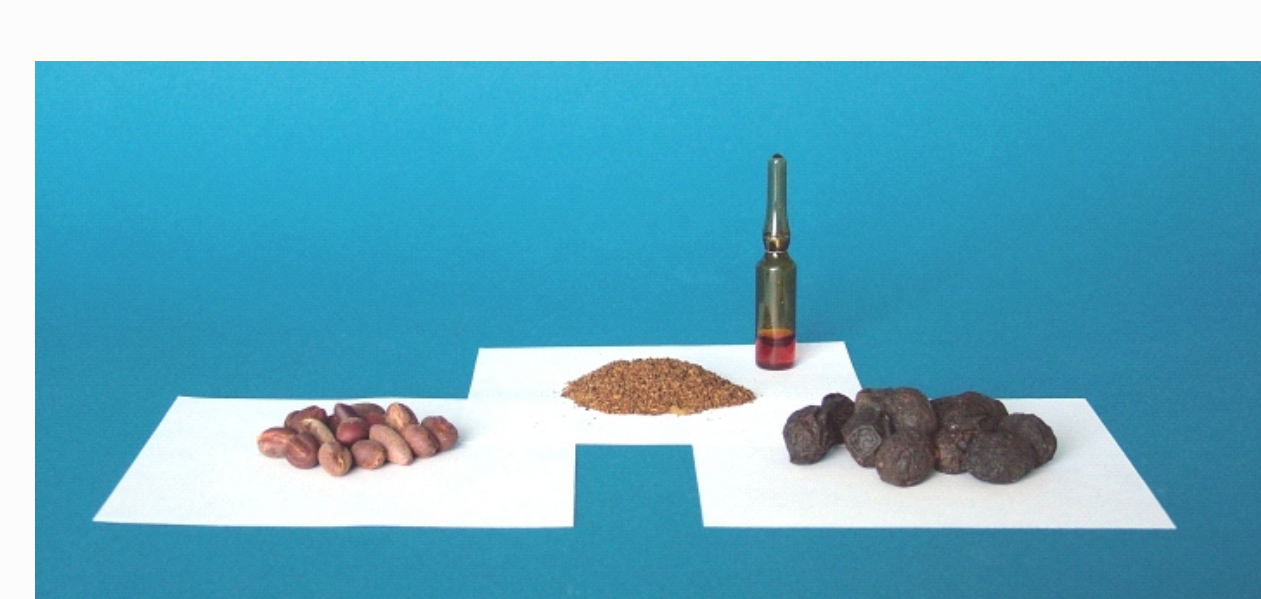


- SRM 3246 *Ginkgo biloba* Leaves
- SRM 3247 *Ginkgo biloba* Extract
- SRM 3248 *Ginkgo biloba* Tablets
- SRM 3249 Ginkgo-Containing Dietary Supplement Suite

Analyses are complete and data are currently being evaluated. Values are expected for terpene lactones (ginkgolides), flavonoids, As, Cd, Pb, and Hg.

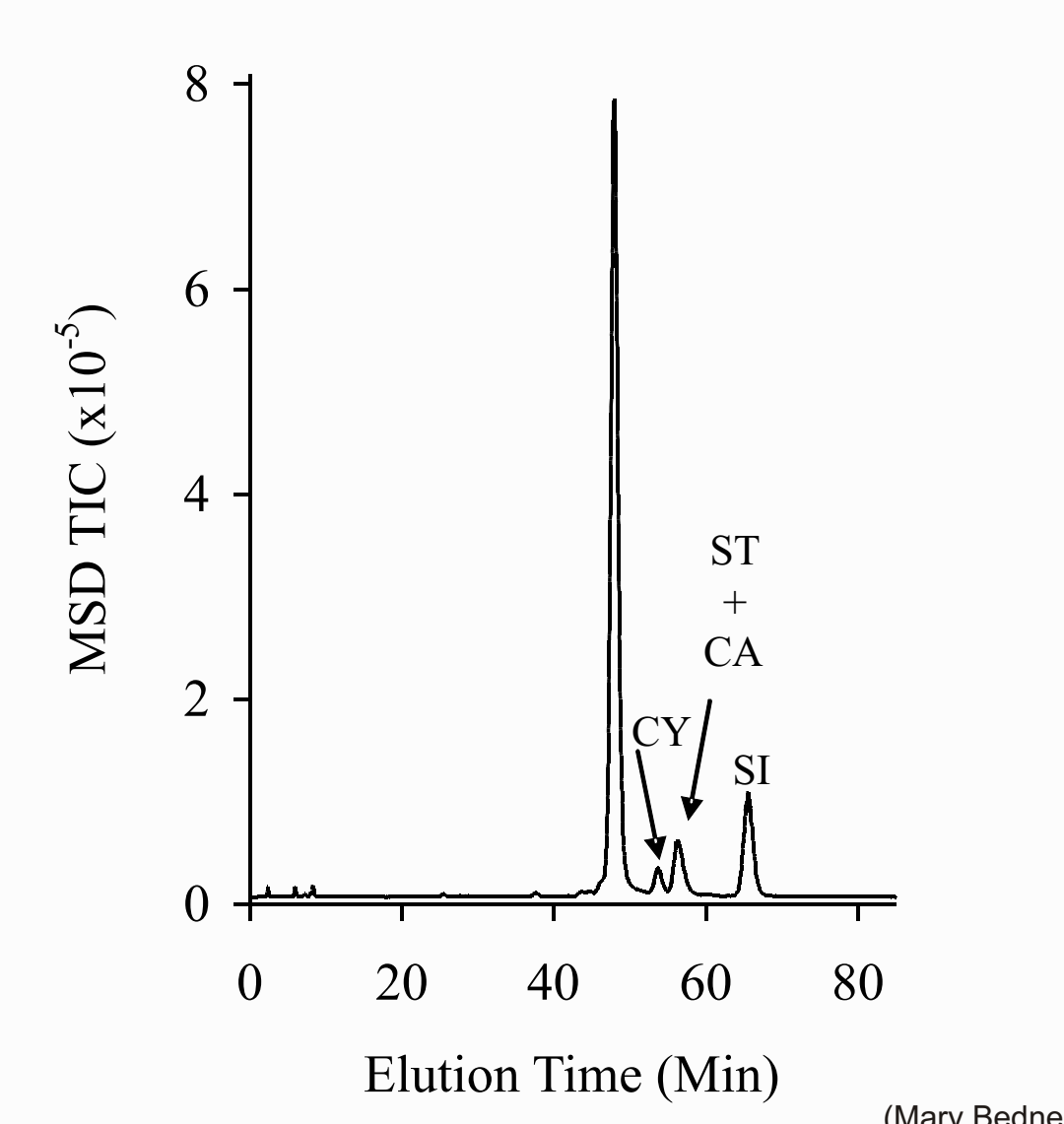
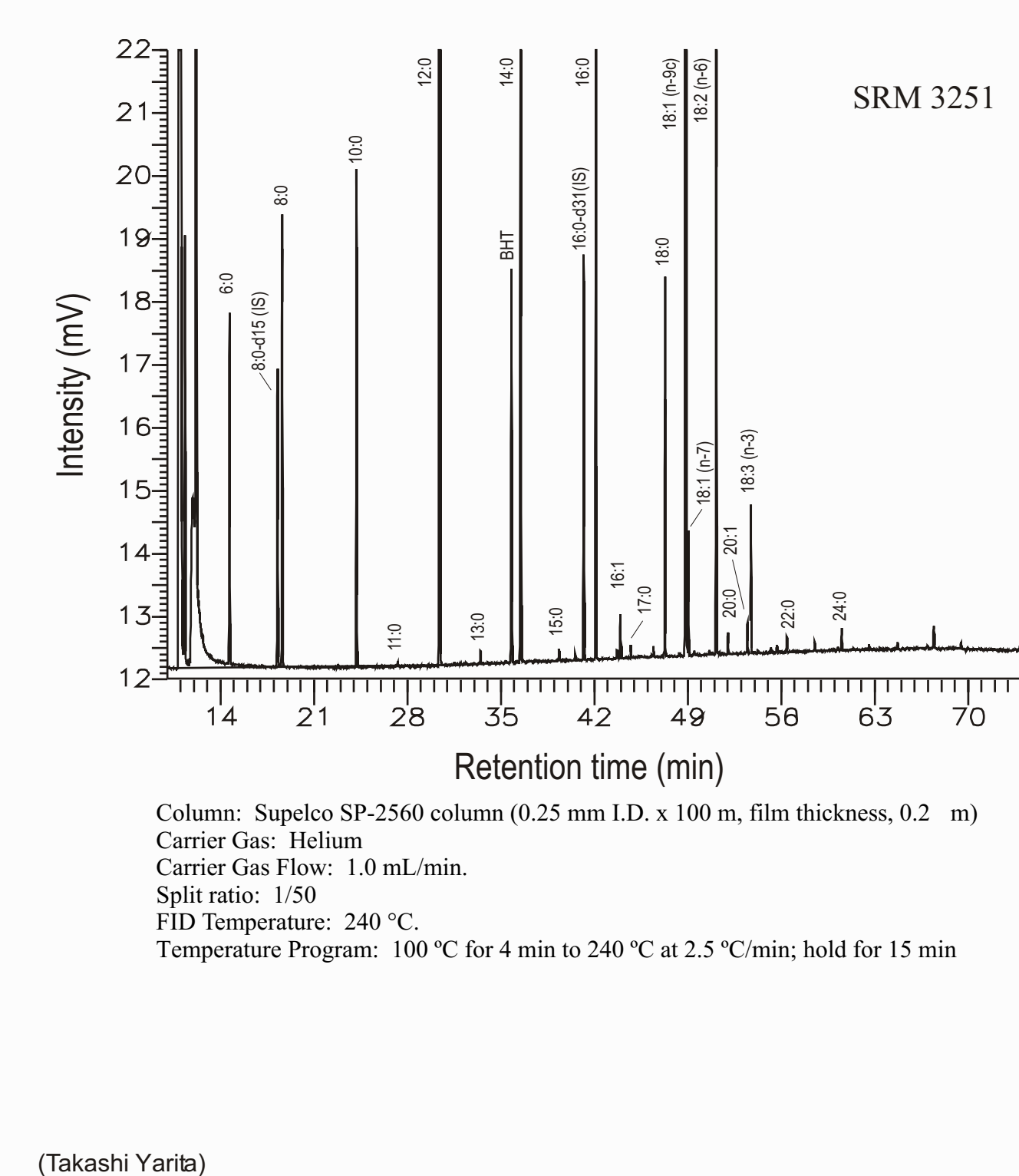
GINKGO

SAW PALMETTO



- SRM 3250  
Saw Palmetto Berries
- SRM 3251  
Saw Palmetto Extract

Analyses are in progress. Values will be assigned for individual fatty acids, sterols, and toxic elements as appropriate.

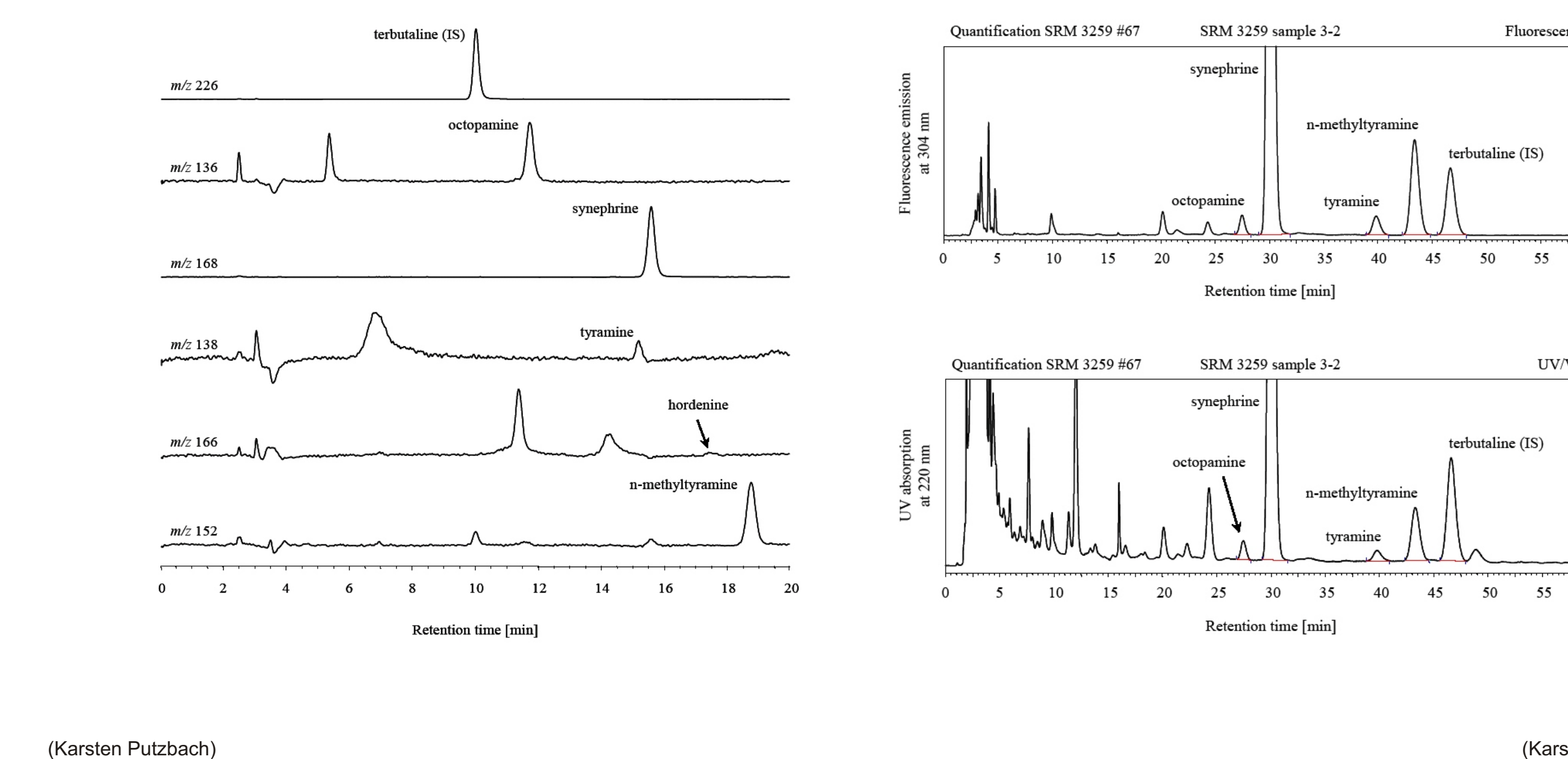


BITTER ORANGE



- SRM 3258 Bitter Orange (Fruit)
- SRM 3259 Bitter Orange Extract
- SRM 3260 Bitter Orange-Containing Solid Oral Dosage Form

Materials have been analyzed and data are being evaluated. Values will be assigned for synephrine and other alkaloids, including caffeine, as appropriate.



GREEN TEA



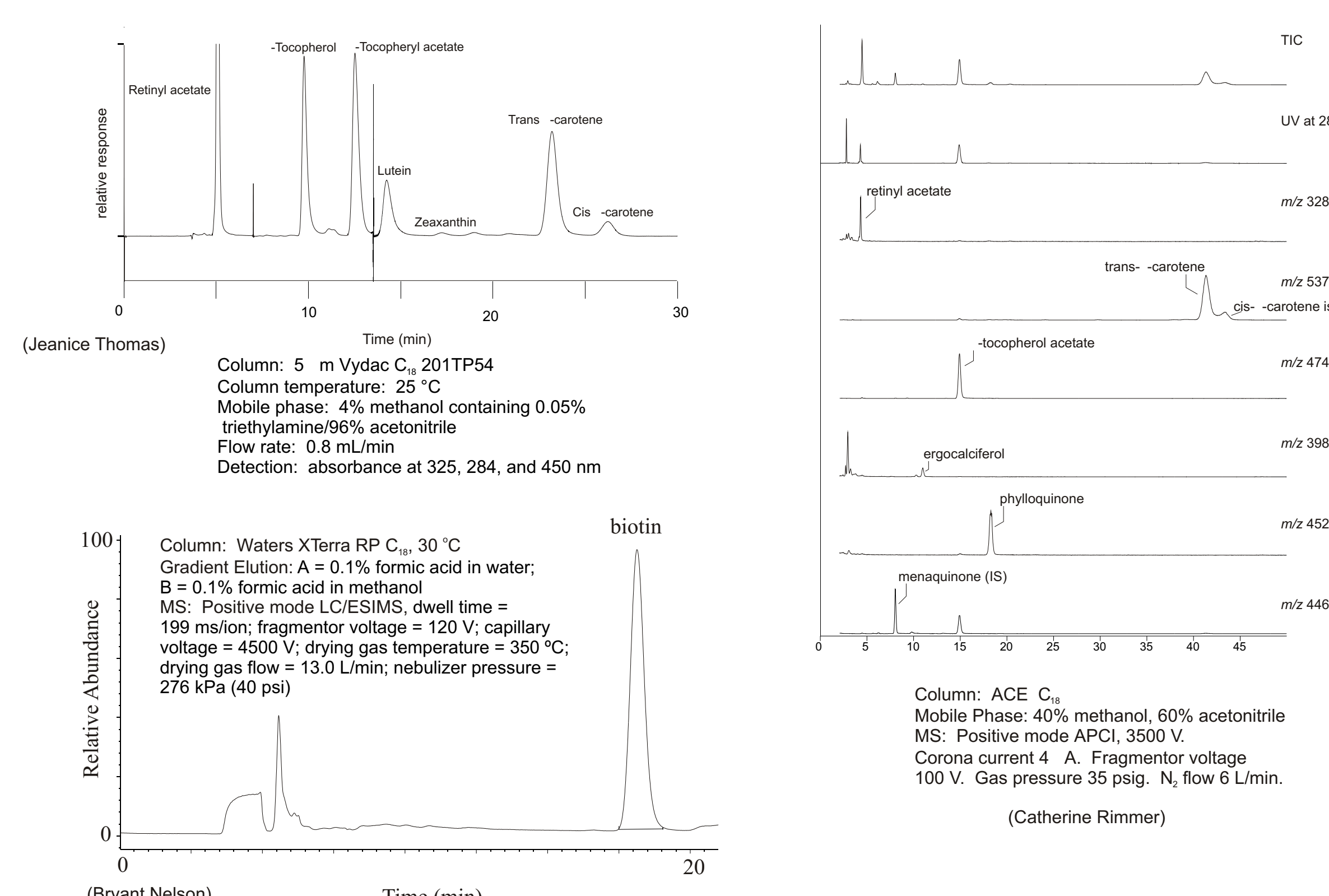
- SRM 3254 *Camellia sinensis* (Leaves)
- SRM 3255 *Camellia sinensis* Extract
- SRM 3256 Green Tea-Containing Solid Oral Dosage form

Values will be assigned for catechins, caffeine, toxic elements, and pesticides, as appropriate.

MULTIVITAMIN/MULTIELEMENT TABLETS



SRM 3280. Element analyses are completed. Material is currently being analyzed for vitamins.

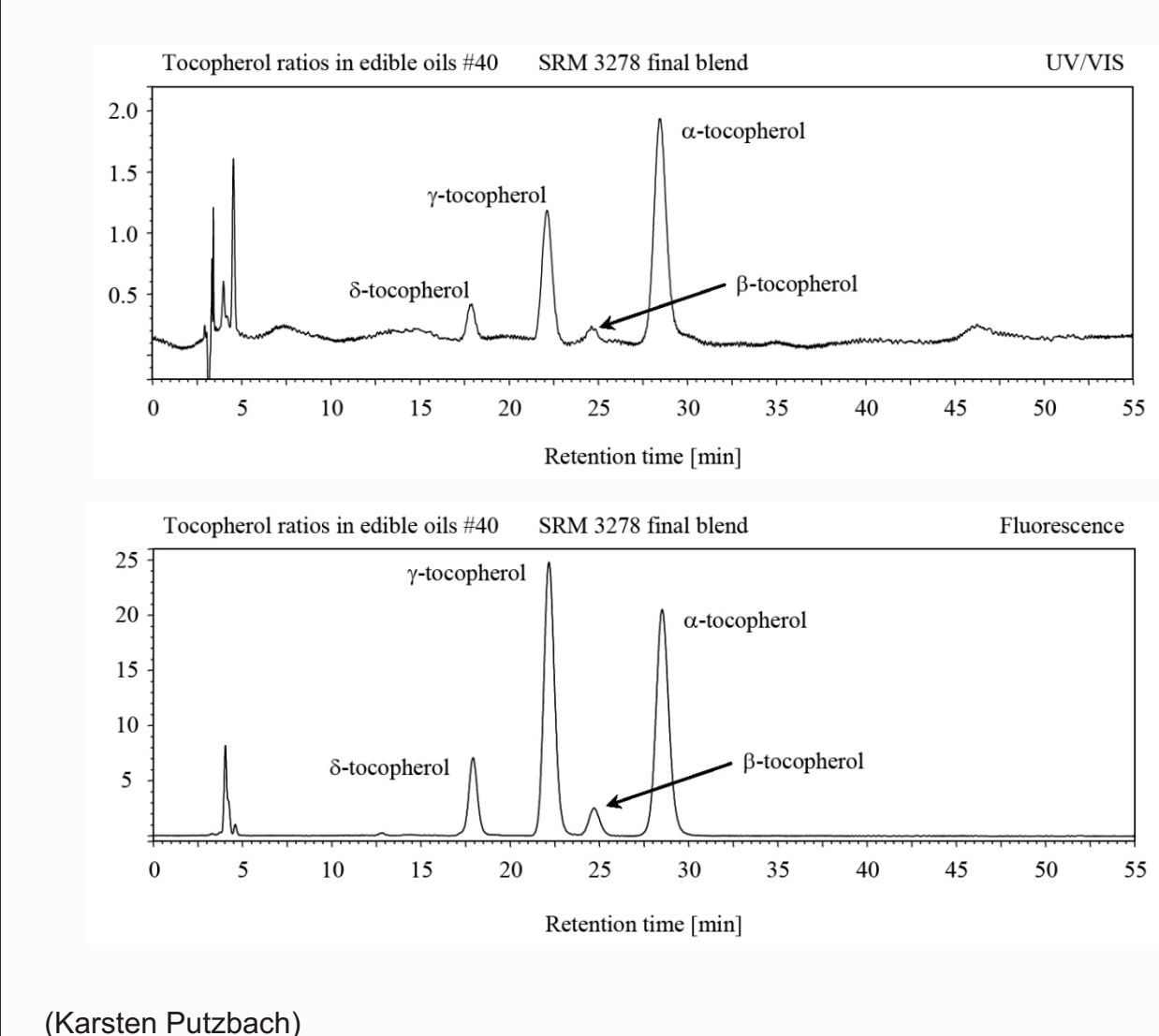


TOCOPHEROLS

SRM 3278  
Tocopherols  
in Edible Oil



Values will be assigned for tocopherols and tocotrienols.



BERRIES

- Cranberries
- Cranberry Juice Cocktail
- Cranberry Extract
- Cranberry-Containing Solid Oral Dosage Form
- Mixed Berry-Containing Solid Oral Dosage Form



- Blueberries
- Blueberry Extract
- Bilberries
- Bilberry Extract

Values assigned for anthocyanins, procyanins, organic acids, etc., as appropriate. Values assigned for nutrients in the juice and berries.

ST. JOHN'S WORT

SOY, KUDZU, & RED CLOVER

BLACK COHOSH

Acquisition of materials is in progress.

Materials will be characterized for active and/or marker compounds, pesticides, and toxic elements as appropriate.

