chemtos NEWS

OCTOBER 29, 2026 VOLUME 26, NUMBER 2

Dear Sir/MAdam,

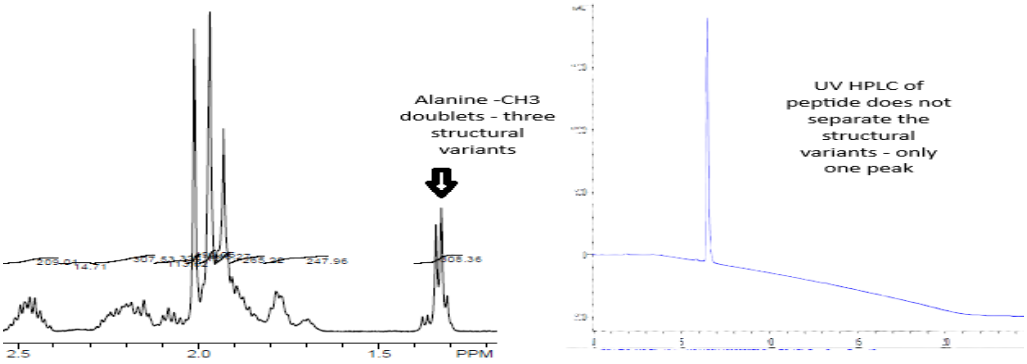
Use of unregulated Peptides have been in the news recently. More specifically, non-FDA approved peptides that people are injecting in their bodies, some of which are being indirectly promoted by RFK Jr and US Department of Health and Human Services. Some are individual peptides with excipients such as Retatrutide, Tirzepatide, BPC-157, Epitalon, KPV, MOTS-c, TB-500, etc, while others are a mix of peptides with excipients such as GLOW, KLOW, etc. These peptide products are often manufactured outside of the US and are sold as lyophilized peptides in sealed vials with various unidentified excipients. Furthermore, we have found that some peptide product vials do not have any peptide in them but instead have a small molecule with UV absorbance to mimic response expected of a peptide in its UV HPLC analysis. The sterility of these products and that of the water used to reconstitute it into an injectable form is another open question.

"You are so fast. This is much appreciated."

There are numerous facilities that offer to analyze these peptide products by UV-HPLC analysis. But such UV-HPLC only analysis strategy can be inadequate since a number of these peptides have weak UV absorbance and eluted peaks are relatively broad and can hide presence of molecular structural variants. Single Quad LC-MS can be more diagnostic in confirming presence of the expected peptide. Here, I want to share that Chemtos has developed proton NMR based methods to confirm presence of expected peptide with higher level of confidence. Brief description may be found here: https://www.chemtos.com/index.php/analytical-services/peptide-analysis-by-nmr

"THANKS. You're awesome."

We have detected products in which the peptide is structurally close to that expected, but had incorrect distribution of amino acids, or had stereo-sequence errors, and some did not contain any peptide at all – even though UV HPLC purity appeared to be >99%. For example, Proton NMR spectrum of a peptide that indicated presence of molecular structure variants that were not detected by UV HPLC is shown below.



Combination of proton qNMR and Single Quad LC-MS analysis provides significantly higher confidence identification than with only qNMR analysis or only Single Quad LC-MS analysis or only UV HPLC analysis.

"Thank you so much! I appreciate the outstanding turnaround time."

"the growing popularity of the qNMR technique you introduced us to. I have to say, since you educated us about its utility, it makes purity determinations MUCH easier."

Chemtos now offers analysis of peptides for their identification and weight potency. We do not attempt to identify the excipients and additives present in the vial due to limitations of the methods we use. Nor can we determine sterility of these products, many of which appear to be under vacuum in the lyophilized sealed vial.

Please consider contacting us if you have a need to analyze or re-certify peptide compounds, especially those that have MW less than ~4000. The proton NMR resonances of higher MW peptides are often too broad to be accurately or sufficiently diagnostic. Note that a folded peptide will have a different proton NMR spectrum, as will peptide with a different salt form or at a different pH.

NMR and qNMR Services

We, at Chemtos, can accurately determine weight fraction of an organic compound, including peptides, in either a solid powder or in a solution. We have spent years optimizing our processes for accurate qNMR analysis using 5-10 mg of sample. The process to submit sample for analysis is simple via a web submission form.

Custom Synthesis of Ref Stds



With years of combined experience in varied chemical synthesis processes and isolation techniques, we have been able to synthesize and isolate compounds and metabolites at high purity, often in short time duration (typically less than 4 weeks). We find innovative ways to insert stable labels in the reference standards that we synthesize, even when others have struggled! We are DEA licensed with quotas for manufacture of C-I through C-V compounds.

Analytical Services



Our typical GLP Certificate of Analysis generation includes (i) UV HPLC Purity; (ii) LC-MS m/z confirmation; and (iii) Proton qNMR analysis for molecular structure confirmation and wt% potency value. We also offer other analytical analysis such as KF titration, Residue on Ignition, Chiral HPLC, FT-IR, GC-MS, and Optical Rotation analysis.

Catalog of in-stock Ref Stds

We carry a number of Certified Analytical Reference Standards in-stock (not for human consumption). All are accompanied by a comprehensive CoA that includes copies of the analytical data and have accurate potency value determined using qNMR. We also offer DEA Exempt 1 ml solutions of analytical reference standards in flame sealed ampoules whose concentration has been confirmed by proton qNMR analysis.



Our web catalog can be found at Chemtos Web Catalog. Use of Search bar is quite effective in finding compounds by name or CAS number. Prices are only displayed to those logged in. If you would like to view prices on our website, please contact info@chemtos.com to generate a web account for your organization.

Please do not hesitate to contact us if we can be of any assistance in fulfilling your Certified Analytical Reference Standard or Compound Re-certification needs. We are at your service whenever you need us.

Sincerely,

Khalid Thakur



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