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Assessing the Purity of an Over-the-Counter Benadryl Generic Over Time Using HPLC Analysis

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I. Background

A. Abstract

This study presents a comprehensive investigation into the time-dependent stability of a liquid formulation generic of the widely used over-the-counter antihistamine, Benadryl, focusing on its active ingredient, diphenhydramine hydrochloride. The experiment, conducted over a span of five weeks, aimed to assess the impact of environmental conditions on the purity of Benadryl, using High-Performance Liquid Chromatography (HPLC) as the analytical tool. Batches of liquid samples were exposed to various conditions—darkness under decreased, room, and increased temperatures, as well as light at room temperature. Results revealed a consistent decline in purity, with light-exposed samples exhibiting the slowest degradation. This research contributes preliminary insights into the nuanced dynamics of liquid Benadryl stability and emphasizes the ongoing need for safety assessments in over-the-counter medications.

B. Introduction

Over-the-counter medications play a crucial role in public health, providing accessible solutions for common health concerns. Among these, Benadryl, with its active ingredient diphenhydramine hydrochloride, is widely relied upon to alleviate allergy symptoms. However, the effectiveness of such medications over time is contingent upon the stability of their active components. This study delves into the specific case of Benadryl, aiming to unravel the intricate interplay between its chemical stability and environmental conditions.

The stability of pharmaceuticals is a multifaceted concern, influenced by factors such as light exposure, temperature variations, and chemical degradation. Diphenhydramine hydrochloride, the antihistamine in Benadryl, is susceptible to changes in its molecular structure under these conditions. The overarching question addressed here is whether the chemical integrity of Benadryl degrades over time, potentially compromising its efficacy and safety for consumers.

Understanding the long-term stability of over-the-counter drugs by taking advantage of an easy-to-replicate system[1] is paramount for ensuring the reliability of these medications in real-world scenarios. In addition, other experiments offered an alternative approach to analyzing impurities in diphenhydramine hydrochloride with readily available solvents, if needed.[2,3] Storage conditions, transportation, and exposure to external elements are variables that can impact the chemical composition of pharmaceuticals. Given the widespread use of Benadryl, a comprehensive investigation into the

stability of its active ingredient becomes not just a scientific endeavor but a critical component of public health assurance.

As previous research has shown, the stability of pharmaceuticals is a nuanced field with multiple influencing factors. This experiment builds upon existing knowledge by focusing on the specific conditions affecting diphenhydramine hydrochloride in Benadryl. The insights gained from this investigation contribute not only to the scientific understanding of drug stability but also have direct implications for regulatory bodies, pharmaceutical manufacturers, and healthcare providers, all of whom are integral in ensuring the continued effectiveness of over-the-counter medications. In this context, the experiment serves as a proactive step toward refining our comprehension of drug stability, aligning with the broader mission of enhancing the safety and efficacy of pharmaceutical products accessible to the general public.

II. Experimental

A. Methodology

The experiment was designed to evaluate the time-dependent stability of a generic of liquid formulation Benadryl, utilizing a liquid chromatography-mass spectrometry (LCMS) approach. Employing a systematic protocol, five samples were prepared simultaneously for each of the four distinct conditions: [1] Dark and Cold (2-4°C / 36-40°F): Samples were stored in darkness at a controlled low temperature range to simulate refrigeration conditions. [2] Dark at Room Temperature: Samples were shielded from light exposure and stored at room temperature to represent typical storage conditions. [3] Dark in Oven (65°C / 149°F): Samples were stored in darkness but exposed to elevated temperatures to mimic extreme storage conditions. [4] Light at Room Temperature: Samples were intentionally exposed to ambient light conditions at room temperature, aiming to assess the impact of photostability.

For each condition, five samples were set aside simultaneously, allowing for parallel assessments. The experimental timeline spanned five weeks, with one sample from each condition batch measured per week. This sampling approach was chosen to mitigate any significant loss of the samples due to the environmental conditions employed.

The generic liquid Benadryl samples, “CVS Health Maximum Strength Allergy Relief Liquid Dye Free Diphenhydramine HCl Oral Antihistamine, Grape” were obtained from distinct manufacturing batches,

each with known lot numbers and manufacture dates. Standard solutions of diphenhydramine hydrochloride purchased from Sigma-Aldrich were prepared using HPLC-grade, high-purity water, establishing a calibration reference for purity analysis. A calibration curve was generated with good linearity by measuring the integrations found at 10.68 ppm, 21.36 ppm, 32.04 ppm, 42.72 ppm, and 53.4 ppm. *(Figure 1)*

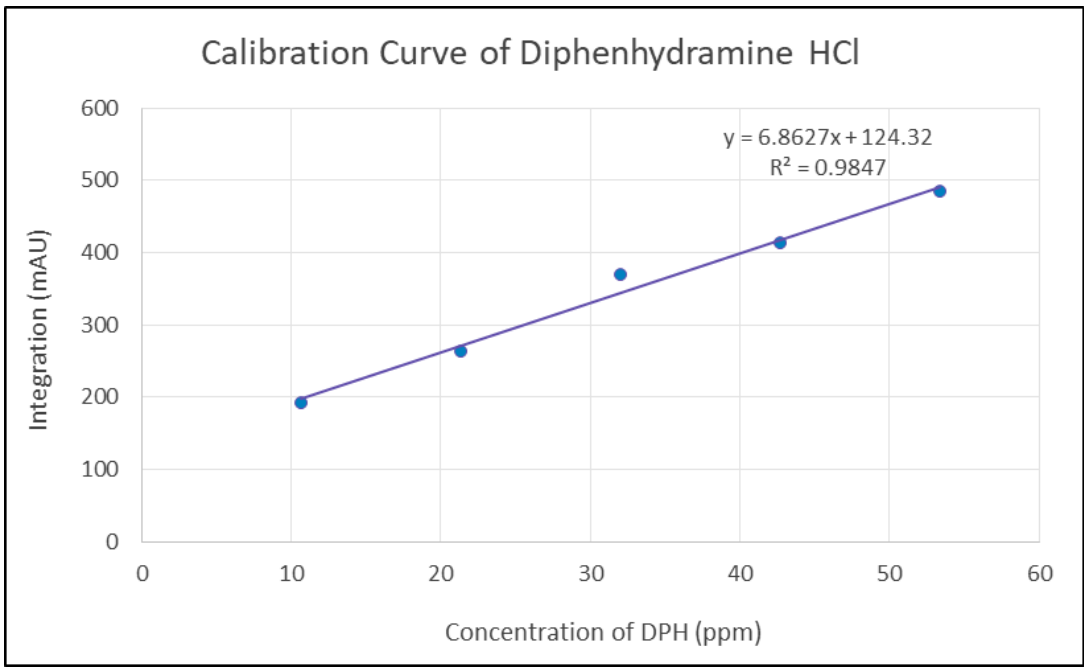


Figure 1: The aforementioned calibration curve measuring the integrations found at 10.68 ppm, 21.36 ppm, 32.04 ppm, 42.72 ppm, and 53.4 ppm.

Each week, one sample per condition was extracted, diluted with HPLC-grade high-purity water to 25 ppm to ensure comparability with the calibration curve, and analyzed using a Dionex / Thermo UltiMate 3000 HPLC System. All samples were run in a 60:40 pH 3.1, filtered, high-purity water system with 0.015 M 1-pentanesulfonic acid : acetonitrile. 1-pentanesulfonic acid was added as an ion-pairing reagent to separate and broaden peaks, making the desired diphenhydramine hydrochloride peak more legible. This system has a literature precedent for being reliable, so it was chosen.[1] Because the limit of detection of the HPLC system is in the low single-digit ppm range, there was no concern regarding the detectability of the samples. The quantification of diphenhydramine hydrochloride concentration in each sample provided a quantitative measure of purity, enabling a detailed assessment of stability over time.

This systematic and methodical approach allowed for nuanced insights into how different storage conditions, including variations in temperature and exposure to light, influence the stability of a generic liquid Benadryl. The experiment's design not only ensured the accuracy of results but also provided a robust foundation for drawing meaningful conclusions about the impact of environmental factors on the stability of this widely used over-the-counter medication.

III. Results

A. Significant Results

The analysis of the liquid formulation Benadryl under varying storage conditions yielded insightful results, with the average rate of change per week providing a quantitative measure of diphenhydramine hydrochloride stability. *(Figure 2)*

Week	Dark Cool	Dark RT	Dark Heat	Light
W1-W2		-11.776211		-0.1326
W2-W3	1.57394956	0.85448114		4.813849
W3-W4	1.00834576	-11.898251	-6.35849	0.958452
W4-W5	-1.48484189	4.45953697	-1.04889	4.542007
Average	0.36581781	-4.5901109	-3.70369	2.545427

Figure 2: Average Rate of Change per Week. All values are in ppm.

Figure 2 revealed distinct trends in the average rate of change per week. The average rate of change per week for samples stored in darkness was -4.590 ppm, indicating a consistent decline in purity over time. For darkness with cool temperatures, a Grubbs test (following the standard formula of subtracting the mean from the questionable data point, then dividing by the standard deviation) identified a gross error in one week's data, necessitating its removal. After this adjustment, the corrected average rate of change per week for samples stored in this condition was 0.366 ppm. As for darkness and heat, the presence of gross

errors in two weeks' data, as flagged by the Grubbs test, prompted their removal. Despite this, the average rate of change per week for samples that were heat-exposed was -3.704 ppm. It's important to note that the lesser amount of data points for heat resulted in a potential skewing of the average. Lastly, samples exposed to light exhibited an average rate of change per week of 2.545 ppm, suggesting not only a slower degradation compared to the other conditions, but a concentration increase.

The impact of the Grubbs test on the data highlights the importance of rigorous quality control measures in experimental design and data interpretation. Removal of data points influenced the calculated averages, particularly for the heat condition.

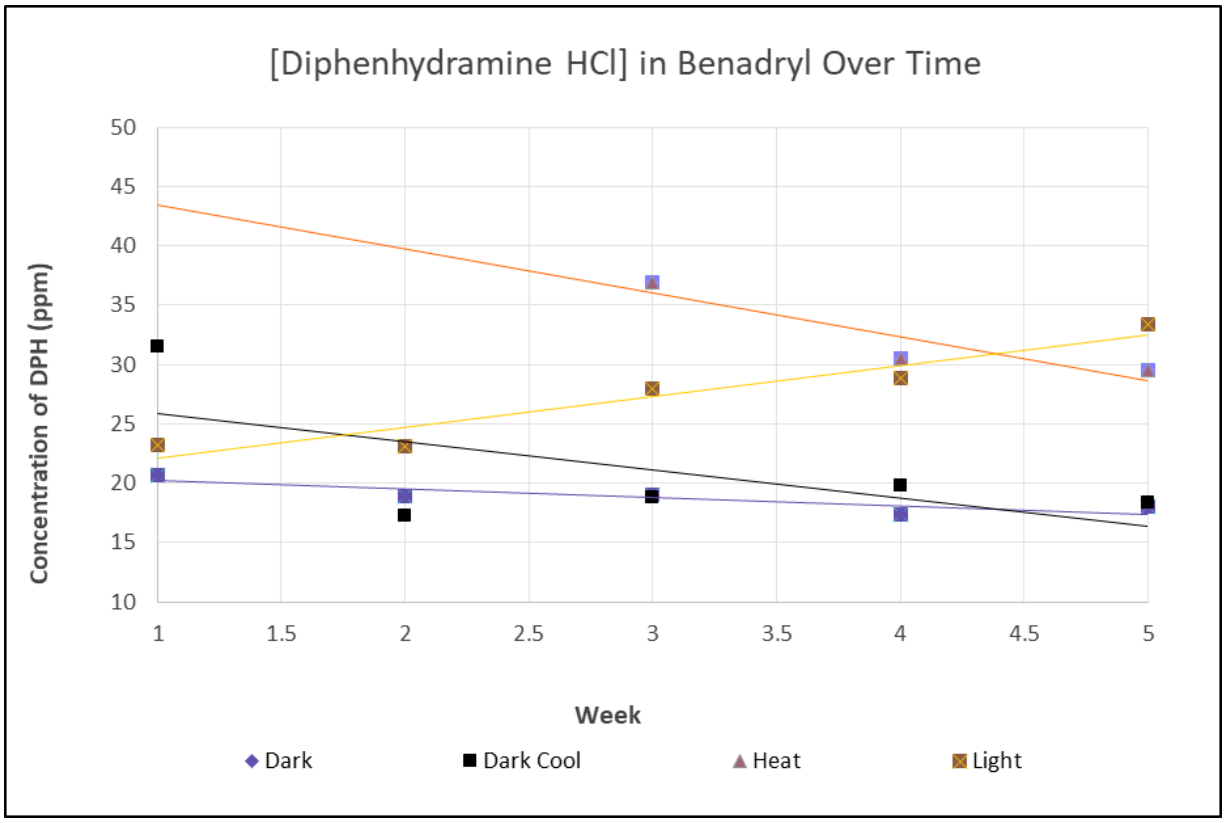


Figure 3: Trendlines Indicating Degradation Trends. Error bars are shown in Figure 3 in the figures section.

To visually represent the observed trends, trendlines were fitted for each storage condition. *(Figure 3)* These trendlines, when considered alongside the calculated averages, mostly align with expectations. Heat is indicative of the fastest degradation, followed by darkness, dark and cool (after the data correction), and light, which exhibits the slowest rate of degradation. The removal of data points due to gross errors is also

considered in this figure, where it can be seen how the lack of data points from Weeks 1 and 2 for heat could easily skew the average. These findings underscore the nuanced impact of environmental conditions on the stability of liquid generic Benadryl. The observed trends mostly align with expectations, providing valuable insights into the potential degradation pathways influenced by storage conditions. However, the light-mediated series warrants further study due to its unexpected results.

In addition to this, the LOD and LOQ of the method were determined to evaluate its viability.

LOD	LOQ
3.631	11.004

Figure 4: As per the ICH guidelines, the calculation of the detection limit (LOD) involves using the formula LOD= 3.3σ / S, where σ represents the standard deviation of the response. Additionally, the limit of quantification (LOQ) is determined by LOQ = 10σ / S. In these equations, S is estimated from the standard deviation of the calibration curve, specifically measured as the standard error of the calibration curve. This process involves utilizing samples within the range of the LOQ to ensure accurate estimation of S for precise LOD and LOQ calculations. All values are in ppm.

B. Discussion of Results

The results of the experiment illuminate the intricate relationship between environmental conditions and the stability of liquid formulation Benadryl, particularly focusing on the degradation of its active ingredient, diphenhydramine hydrochloride. The key observations and trends provide valuable insights into the nuanced dynamics of degradation under varying storage conditions.

The calculated average rates of change per week for each storage condition serve as quantitative indicators of diphenhydramine hydrochloride stability. The results indicated a consistent decline in purity over time for samples stored in darkness and exposed to heat. However, it is crucial to acknowledge the potential skewing effect on the average rate for the heat condition due to the removal of two weeks' data points flagged by the Grubbs test.

The removal of data points is a critical aspect that influences the overall interpretation. The Grubbs test identified gross errors in the dataset, prompting the exclusion of specific weeks' data from the dark/cool

and heat conditions. This process aimed to enhance the reliability of the results by eliminating anomalies that could distort the calculated averages.

The fitted trendlines for each storage condition provided a visual representation of the degradation trends. The expectation that heat would lead to the fastest degradation, followed by darkness, and then dark/cool (after data correction), aligns with the observed trends. The trendlines reinforce the hypothesis that environmental conditions, particularly heat, play a pivotal role in influencing the stability of liquid generic Benadryl. Contrary to expectations, the data suggest that light-exposed samples exhibited not just a slow rate of degradation compared to other conditions, but a concentration increase as well. This unexpected observation prompts consideration of the potential protective effect of light on the stability of diphenhydramine hydrochloride, and further studies on the photochemical processes involved in the degradation of this compound under light-exposed conditions could provide additional insights.

As a working theory, this is most likely caused by photostability induced by the inactive ingredient sodium benzoate's role as an antioxidant. This would allow for the ingredient to shut down any radical light-mediated degradation pathways, thereby contributing to the active's stability. This could also be explained by the photostability of diphenhydramine HCl being higher than the remainder of the additives or the solvent itself, explaining why the concentration would gradually increase through the slow degradation of the inactive ingredients.

The findings have implications for the storage recommendations of liquid generic Benadryl. Understanding the impact of temperature and light exposure on the stability of the active ingredient is crucial for ensuring the efficacy and safety of over-the-counter medications. The observed trends suggest that careful consideration should be given to storage conditions to preserve the purity of liquid generic Benadryl over time. However, it is also imperative to acknowledge the limitations of the study, particularly the reduced data points for the heat condition. Further research with an increased sample size for heat-exposed samples would enhance the robustness of the results. Additionally, exploring the specific degradation pathways influenced by light exposure could provide deeper insights into the observed protective effect.

C. Error Analysis

While this experiment provides valuable insights into the stability of liquid Benadryl, it is crucial to acknowledge and analyze potential sources of error that may impact the interpretation of results.

The necessity to remove data points, particularly for the heat condition, raises concerns about the representativeness of the average rate of change per week for this specific setting. The Grubbs test, although essential for identifying outliers, introduces a level of subjectivity in data exclusion. Future experiments should aim for a more robust experimental setup to minimize the need for data point removal. The removal of two weeks' worth of data for the heat condition significantly reduces the dataset, potentially skewing the average rate of change per week. The limited data points for heat-exposed samples may compromise the accuracy of our conclusions regarding the degradation trends under elevated temperatures.

Despite efforts to control environmental variables, variations in conditions such as humidity and temperature within the stability chamber or controlled environments may introduce unintended variability. This inherent variability can impact the precision and reproducibility of the results.

This analysis assumes a linear degradation model, which may oversimplify the complex chemical reactions involved in the degradation of diphenhydramine hydrochloride. The actual degradation process may follow a more intricate pattern, introducing a degree of uncertainty in the interpretation of the average rate of change. In addition, while HPLC is a powerful analytical tool, the precision of the instrument and potential variations in the calibration process could introduce minor errors in quantifying the concentration of diphenhydramine hydrochloride. Periodic recalibration and meticulous maintenance are essential to minimize these potential errors.

Acknowledging these potential sources of error is crucial for a comprehensive understanding of the experiment's limitations and for guiding future research efforts. Addressing these concerns will contribute to the refinement and reliability of findings in subsequent studies exploring the stability of liquid generic Benadryl under various conditions.

IV. Conclusions

In evaluating the stability of liquid Benadryl using HPLC analysis, our experiment largely supports the hypothesis that the purity of diphenhydramine hydrochloride degrades over time, influenced by environmental conditions. While confirming the expected trends, such as accelerated degradation in higher temperatures and darkness, the surprising resilience of the drug to light exposure challenges conventional assumptions. The removal of data points, particularly for the heat condition due to the Grubbs test, introduces some uncertainty. Nevertheless, these findings carry significant implications for storage recommendations, emphasizing the need for careful consideration of environmental factors. The unexpected protective effect of light prompts further research into its specific mechanisms, and the study highlights the importance of rigorous quality control measures in experimental design. Overall, this investigation contributes valuable insights into the nuanced dynamics of liquid Benadryl stability, laying the foundation for future research and refining storage guidelines for enhanced consumer safety and drug efficacy.

V. References

[1] “Quantitative analysis of liquid formulations using FT-Raman spectroscopy and HPLC The case of diphenhydramine hydrochloride in Benadryl” by M. G. Orkoula, et al. (NATIONAL LIBRARY OF MEDICINE, 2006).

[2] “Development of The Stable, Reliable, Fast and Simple RP-HPLC Analytical Method for Quantifying Diphenhydramine-Hcl (DPH) In Pharmaceuticals” by H. N. K. Al-Salman, et al. (INTERNATIONAL JOURNAL OF PHARMACEUTICAL RESEARCH, 2020).

[3] “UHPLC assay and impurity methods for diphenhydramine and phenylephrine hydrochloride oral solution” by D. Kirkpatrick, et al. (NATIONAL LIBRARY OF MEDICINE, 2020).

VI. Figures

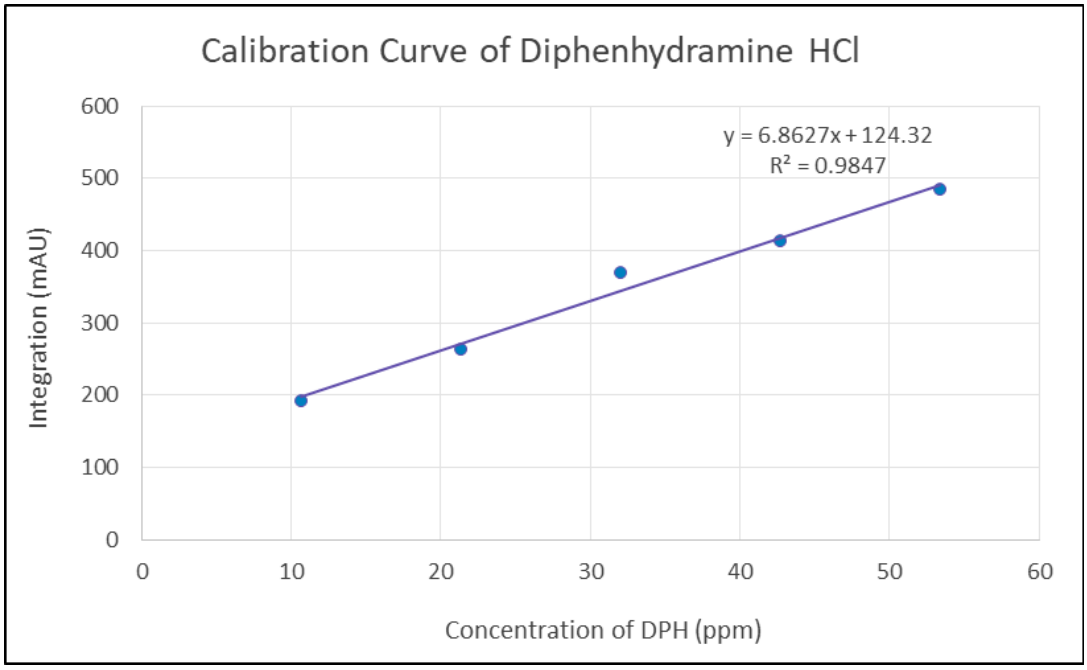


Figure 1: Calibration Curve measuring a diphenhydramine HCl standard at 10.68 ppm, 21.36 ppm, 32.04 ppm, 42.72 ppm, and 53.4 ppm.

Week	Dark Cool	Dark RT	Dark Heat	Light
W1-W2		-11.776211		-0.1326
W2-W3	1.57394956	0.85448114		4.813849
W3-W4	1.00834576	-11.898251	-6.35849	0.958452
W4-W5	-1.48484189	4.45953697	-1.04889	4.542007
Average	0.36581781	-4.5901109	-3.70369	2.545427

Figure 2: Average Rate of Change per Week. All values are in ppm.

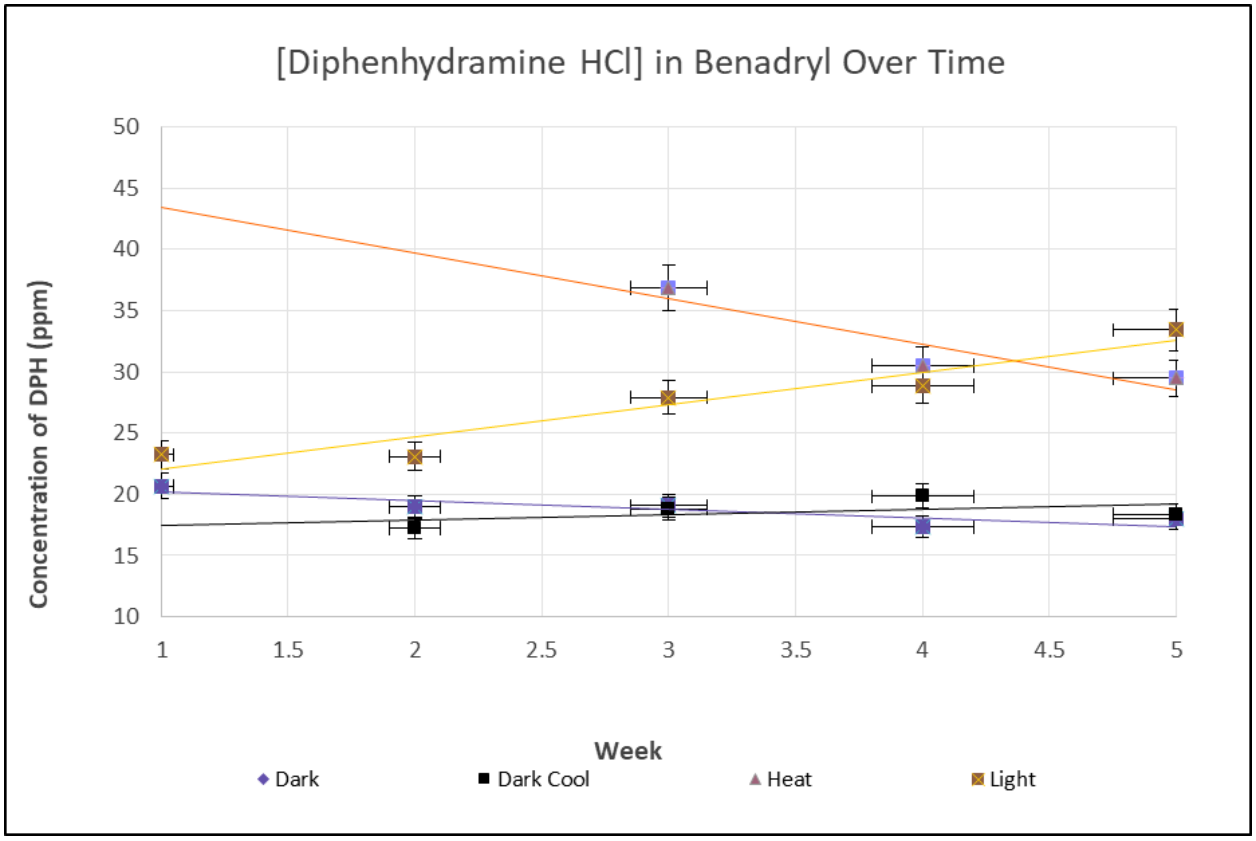


Figure 3: Trendlines Indicating Degradation Trends. Error bars represent a 5% error for each point.

LOD	LOQ
3.631	11.004

Figure 4: As per the ICH guidelines, the calculation of the detection limit (LOD) involves using the formula LOD= 3.3σ / S, where σ represents the standard deviation of the response. Additionally, the limit of quantification (LOQ) is determined by LOQ = 10σ / S. In these equations, S is estimated from the standard deviation of the calibration curve, specifically measured as the standard error of the calibration curve. This process involves utilizing samples within the range of the LOQ to ensure accurate estimation of S for precise LOD and LOQ calculations. All values are in ppm.

VII. Raw Data

All Raw Data, including calculations and spectra, is attached to the following page.

Sequence Overview

Sequence Details

Name:	**tlj cc sequence**	*Created On:*	**01/Nov/23 14:48:47**
Directory:	**Instrument Data\HPLC\Sequences\CH376K**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**01/Nov/23 15:43:56**
No. of Injections:	**6**	*Updated By:*	**student**

Injection Details

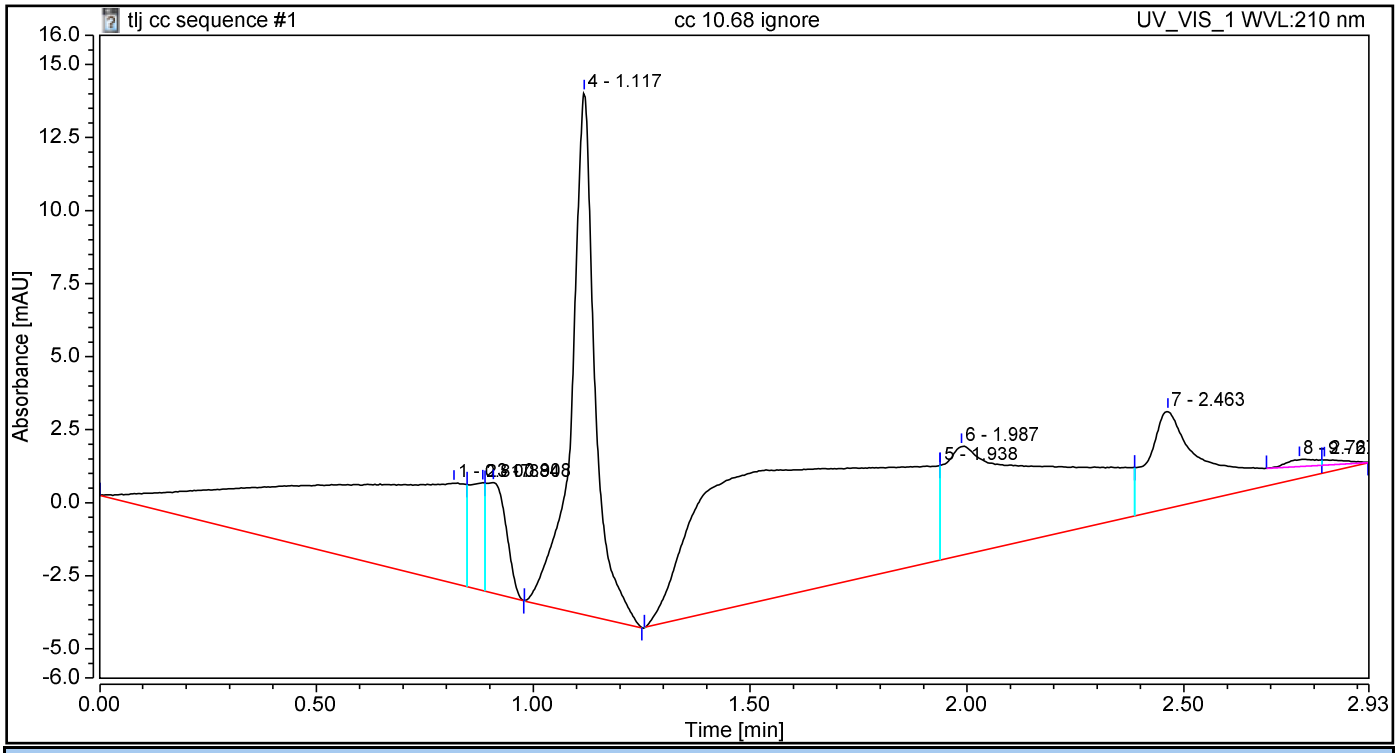
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	cc 10.68 ignore	5	Unknown		01/Nov/23 14:57:14	Interrupted
2	cc 21.36	1	Unknown		01/Nov/23 15:01:58	Finished
3	cc 32.04	2	Unknown		01/Nov/23 15:11:16	Finished
4	cc 42.72	3	Unknown		01/Nov/23 15:19:27	Finished
5	cc 53.40	4	Unknown		01/Nov/23 15:27:40	Finished
6	cc 10.68	0	Unknown		01/Nov/23 15:35:54	Finished

Chromatogram and Results

Injection Details

Injection Name:	**cc 10.68 ignore**	*Run Time (min):*	**2.93**
Vial Number:	**5**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

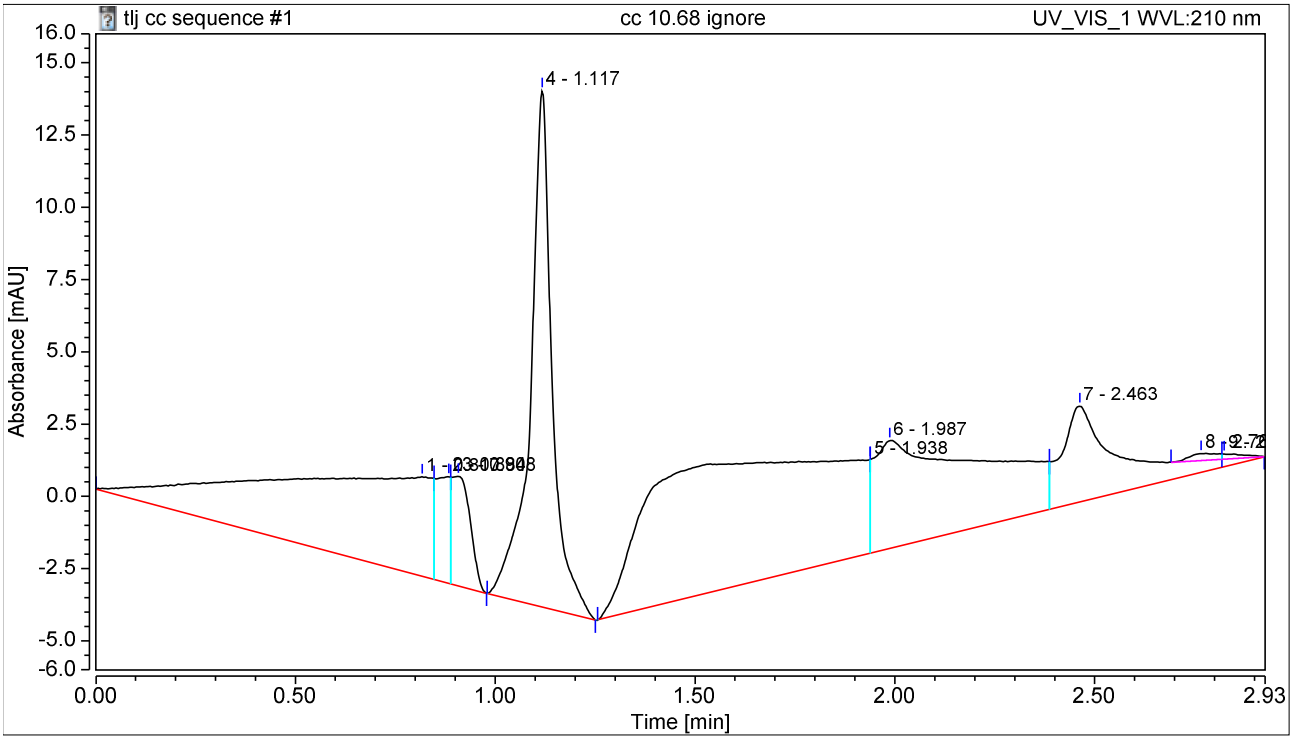
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.817	1.541	3.441	21.46	8.70	n.a.
2		0.884	0.150	3.699	2.09	9.35	n.a.
3		0.908	0.203	3.797	2.82	9.60	n.a.
4		1.117	1.136	17.874	15.83	45.20	n.a.
5		1.938	2.423	3.239	33.74	8.19	n.a.
6		1.987	1.139	3.731	15.86	9.43	n.a.
7		2.463	0.558	3.329	7.77	8.42	n.a.
8		2.767	0.020	0.252	0.27	0.64	n.a.
9		2.824	0.011	0.185	0.15	0.47	n.a.
Total:			**7.180**	**39.547**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**cc 10.68 ignore**	*Run Time (min):*	**2.93**
Vial Number:	**5**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**cc 21.36**	*Run Time (min):*	**8.00**
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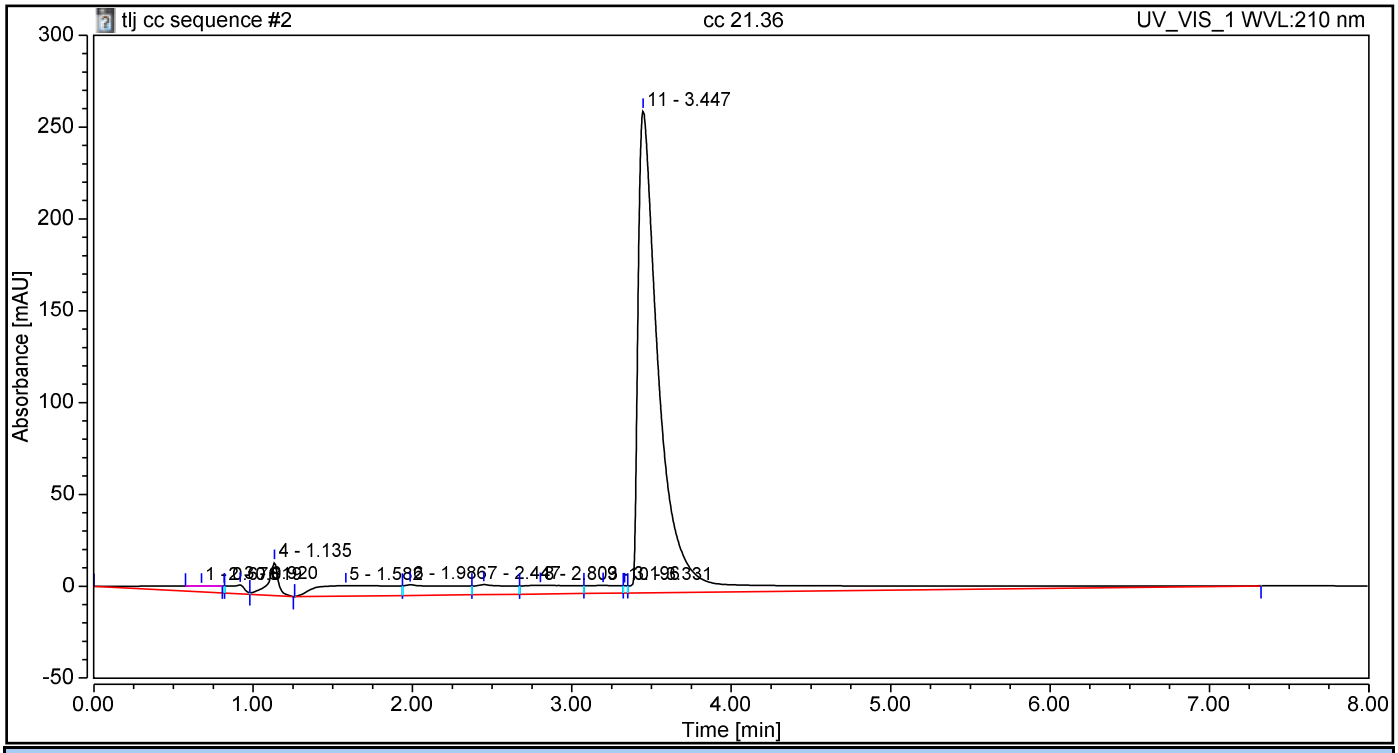
Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.676	0.009	0.099	0.02	0.03	n.a.
2		0.819	1.585	3.885	2.74	1.22	n.a.
3		0.920	0.570	4.882	0.99	1.53	n.a.
4		1.135	1.331	18.143	2.30	5.68	n.a.
5		1.582	3.272	5.658	5.66	1.77	n.a.
6		1.986	2.211	5.898	3.83	1.85	n.a.
7		2.447	1.446	5.509	2.50	1.73	n.a.
8		2.803	1.813	4.676	3.14	1.46	n.a.
9		3.196	1.026	4.304	1.78	1.35	n.a.
10		3.331	0.107	3.925	0.19	1.23	n.a.
11		3.447	44.413	262.308	76.86	82.15	n.a.
Total:			**57.784**	**319.285**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**cc 21.36**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
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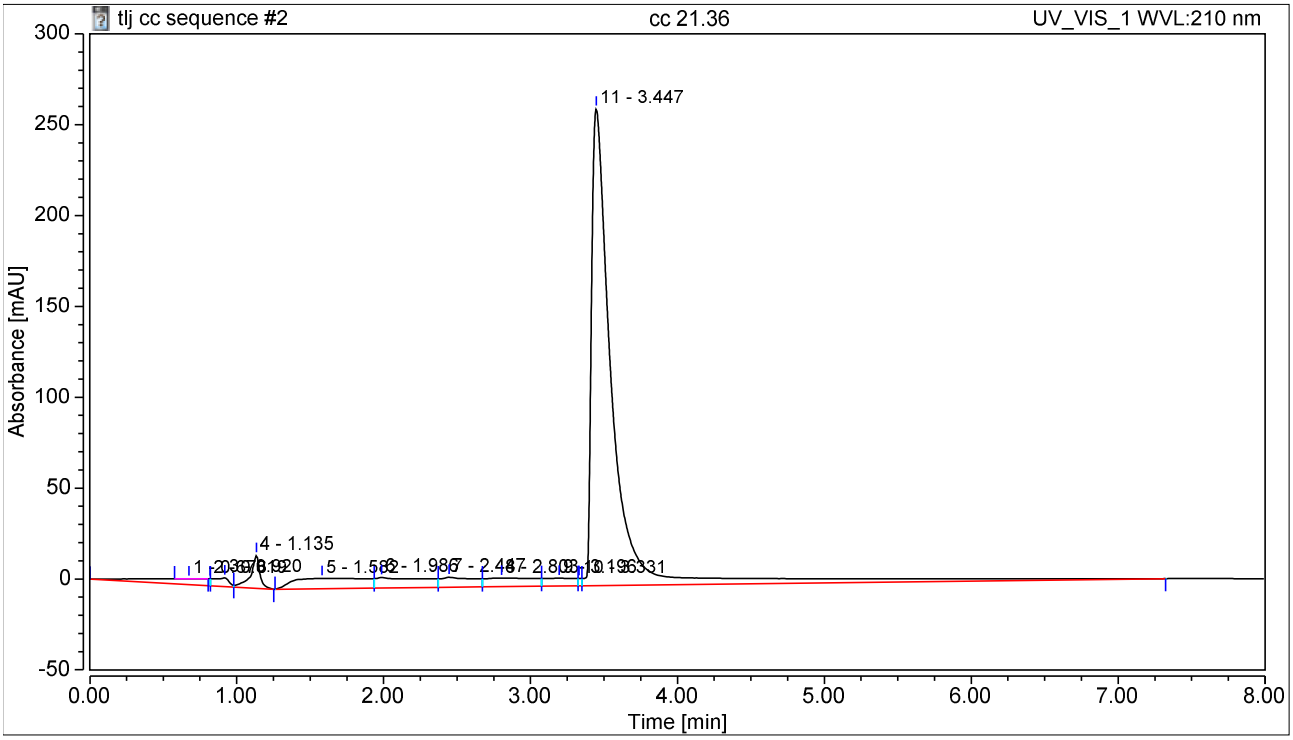
Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**cc 32.04**	*Run Time (min):*	**8.00**
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Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
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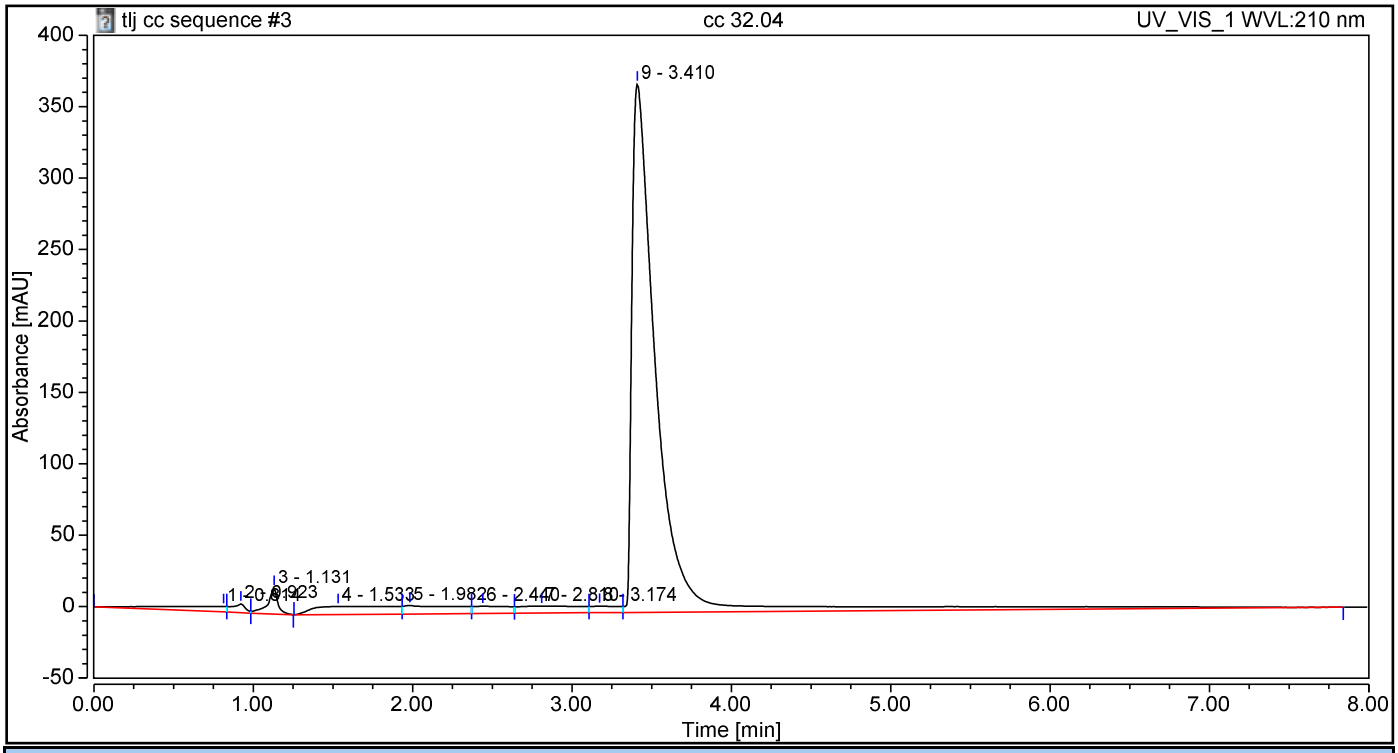
Chromatogram



Integration Results

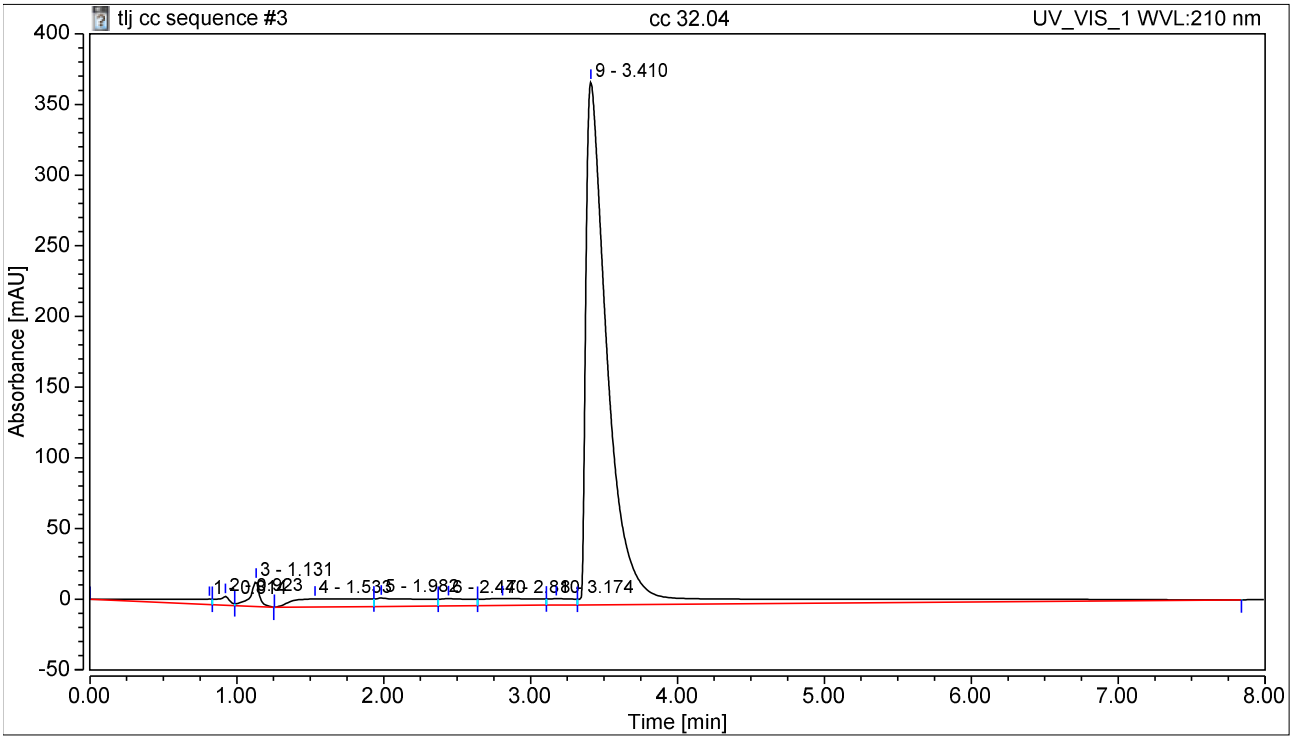
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.814	1.603	3.784	1.94	0.89	n.a.
2		0.923	0.601	6.146	0.73	1.45	n.a.
3		1.131	1.324	17.946	1.60	4.23	n.a.
4		1.533	3.260	5.682	3.95	1.34	n.a.
5		1.982	2.266	5.998	2.75	1.41	n.a.
6		2.440	1.304	5.205	1.58	1.23	n.a.
7		2.810	2.170	4.870	2.63	1.15	n.a.
8		3.174	0.930	4.633	1.13	1.09	n.a.
9		3.410	69.050	369.873	83.69	87.21	n.a.
Total:			**82.507**	**424.136**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**cc 32.04**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:11**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

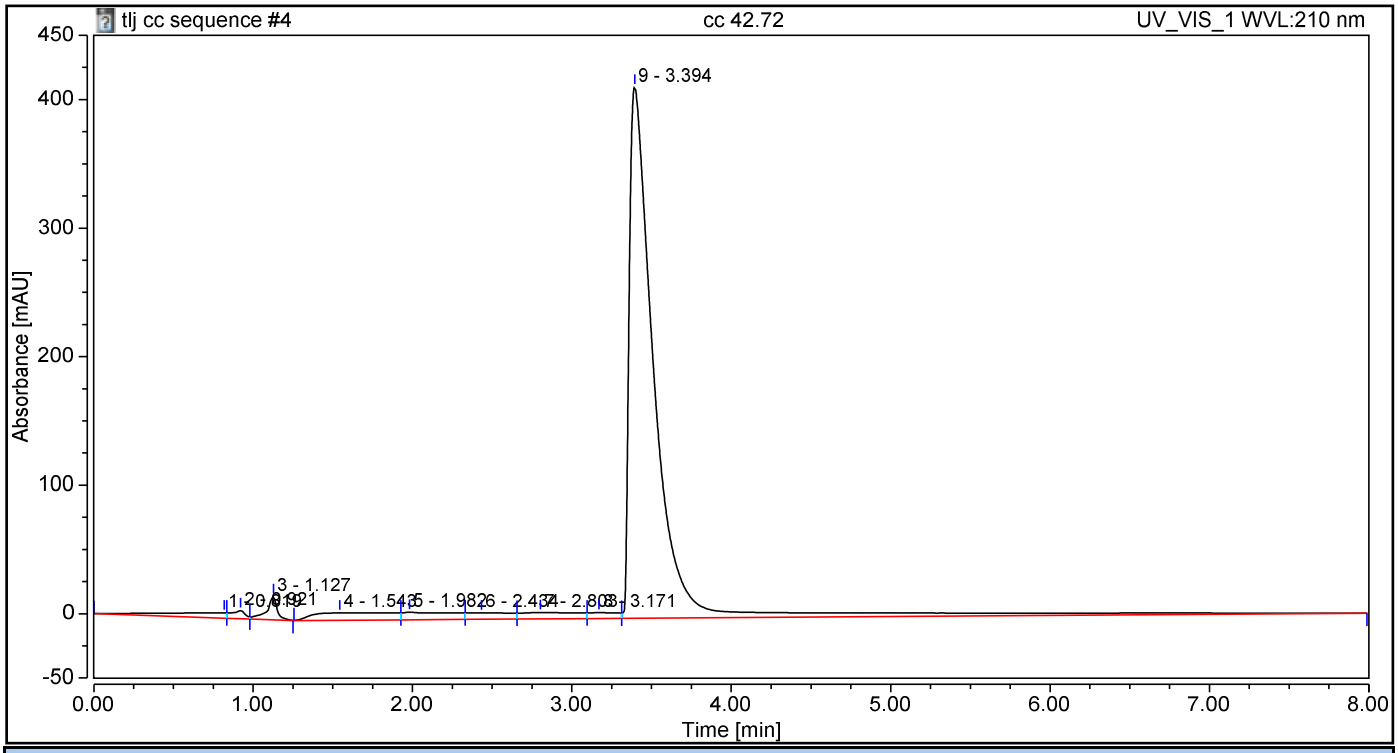
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**cc 42.72**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

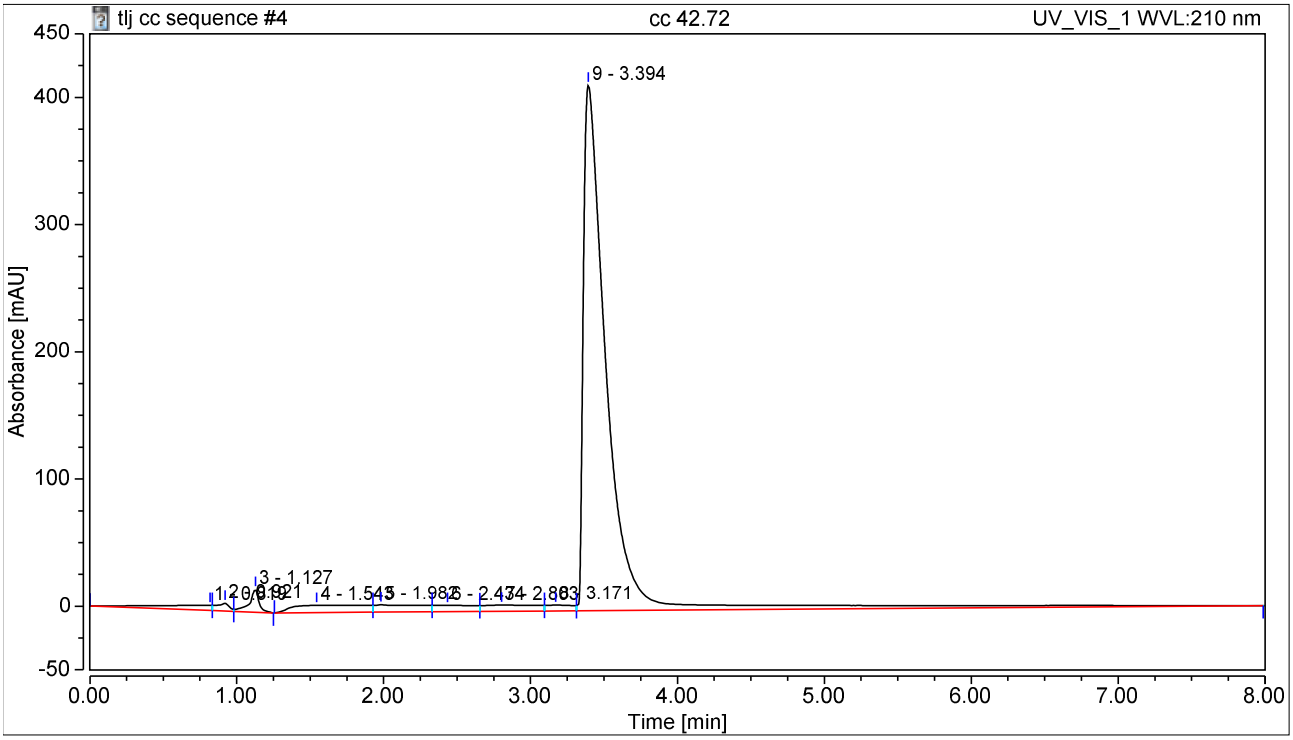
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.819	1.738	4.100	1.88	0.88	n.a.
2		0.921	0.625	6.306	0.67	1.35	n.a.
3		1.127	1.380	18.096	1.49	3.87	n.a.
4		1.543	3.231	5.694	3.49	1.22	n.a.
5		1.982	2.123	5.892	2.29	1.26	n.a.
6		2.434	1.570	5.047	1.70	1.08	n.a.
7		2.803	2.037	4.843	2.20	1.04	n.a.
8		3.171	0.953	4.691	1.03	1.00	n.a.
9		3.394	78.884	413.154	85.24	88.31	n.a.
Total:			**92.541**	**467.823**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**cc 42.72**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

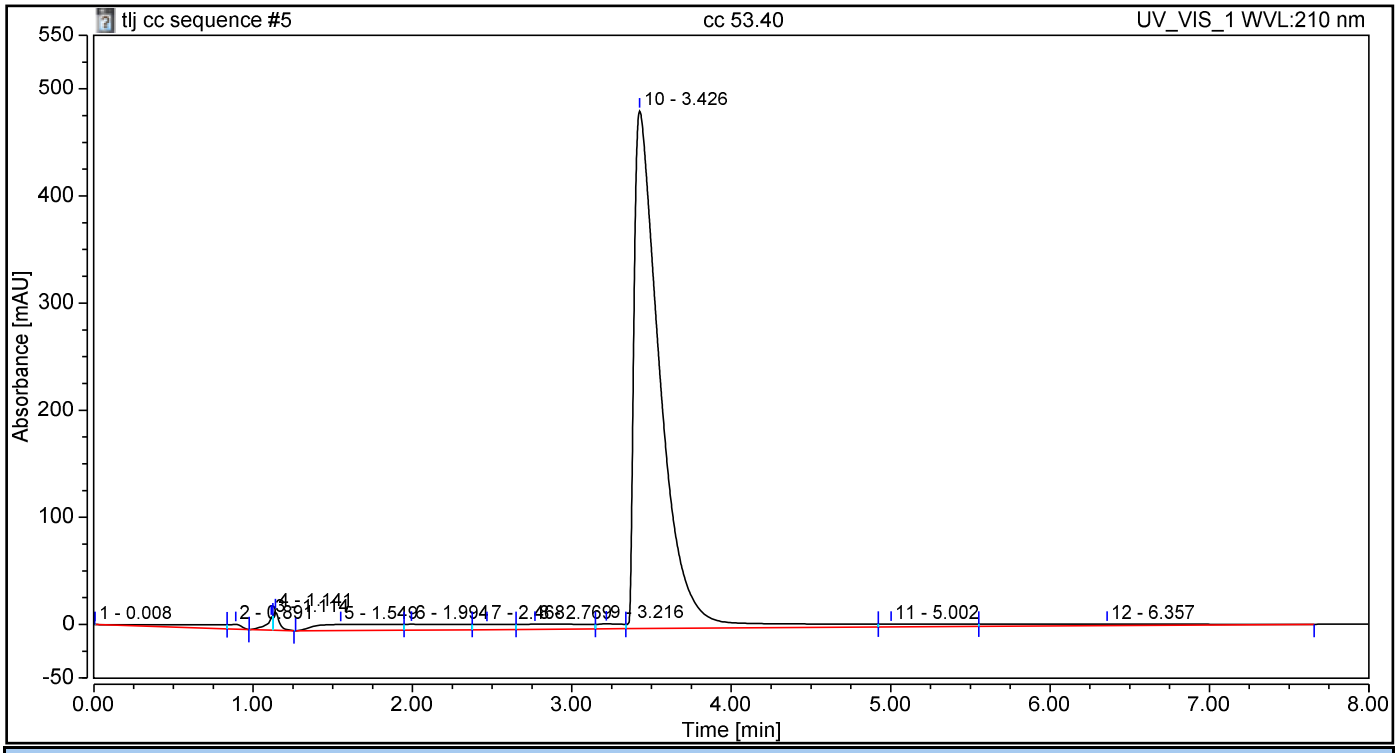
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**cc 53.40**	*Run Time (min):*	**8.00**
Vial Number:	**4**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

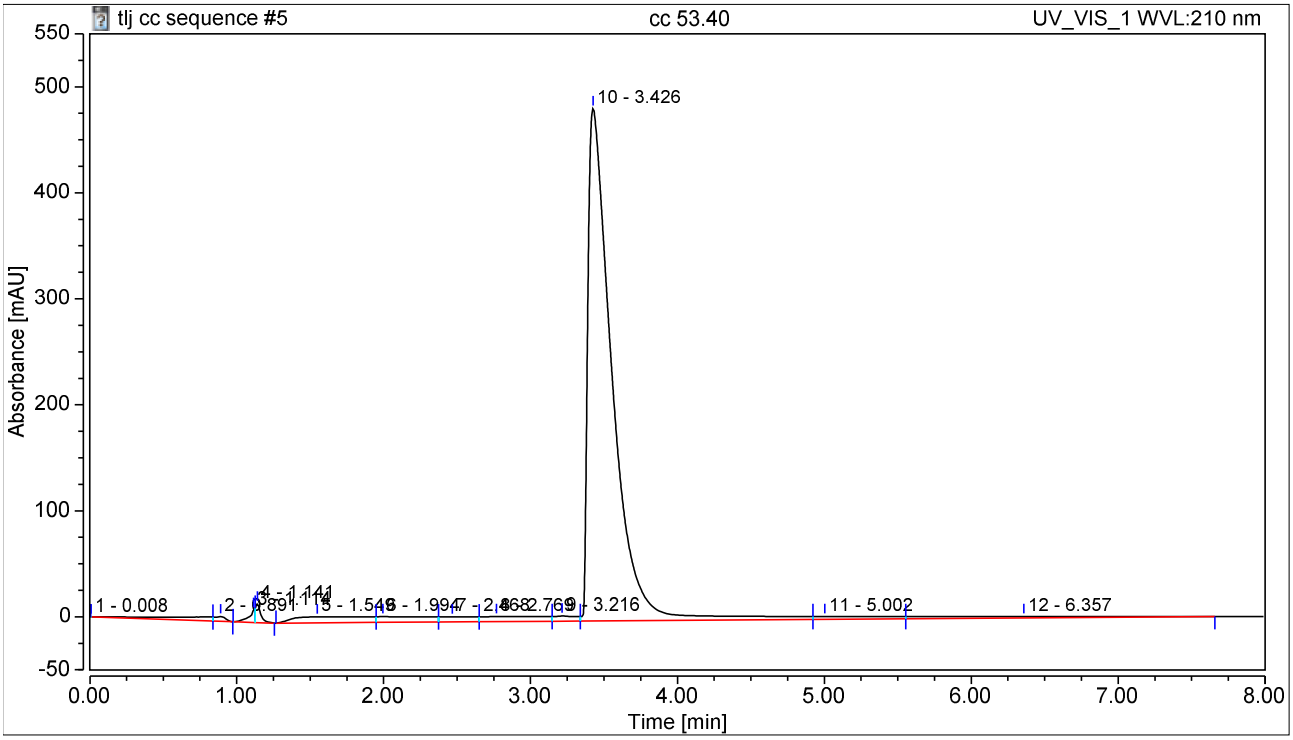
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.008	1.563	0.030	1.43	0.01	n.a.
2		0.891	0.401	4.426	0.37	0.81	n.a.
3		1.114	0.565	11.398	0.51	2.09	n.a.
4		1.141	0.728	17.535	0.66	3.21	n.a.
5		1.549	3.265	5.659	2.98	1.04	n.a.
6		1.994	2.165	5.548	1.97	1.01	n.a.
7		2.468	1.308	4.872	1.19	0.89	n.a.
8		2.769	2.289	4.885	2.09	0.89	n.a.
9		3.216	0.848	4.822	0.77	0.88	n.a.
10		3.426	92.773	483.364	84.58	88.42	n.a.
11		5.002	1.537	2.741	1.40	0.50	n.a.
12		6.357	2.243	1.391	2.05	0.25	n.a.
Total:			**109.684**	**546.670**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**cc 53.40**	*Run Time (min):*	**8.00**
Vial Number:	**4**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

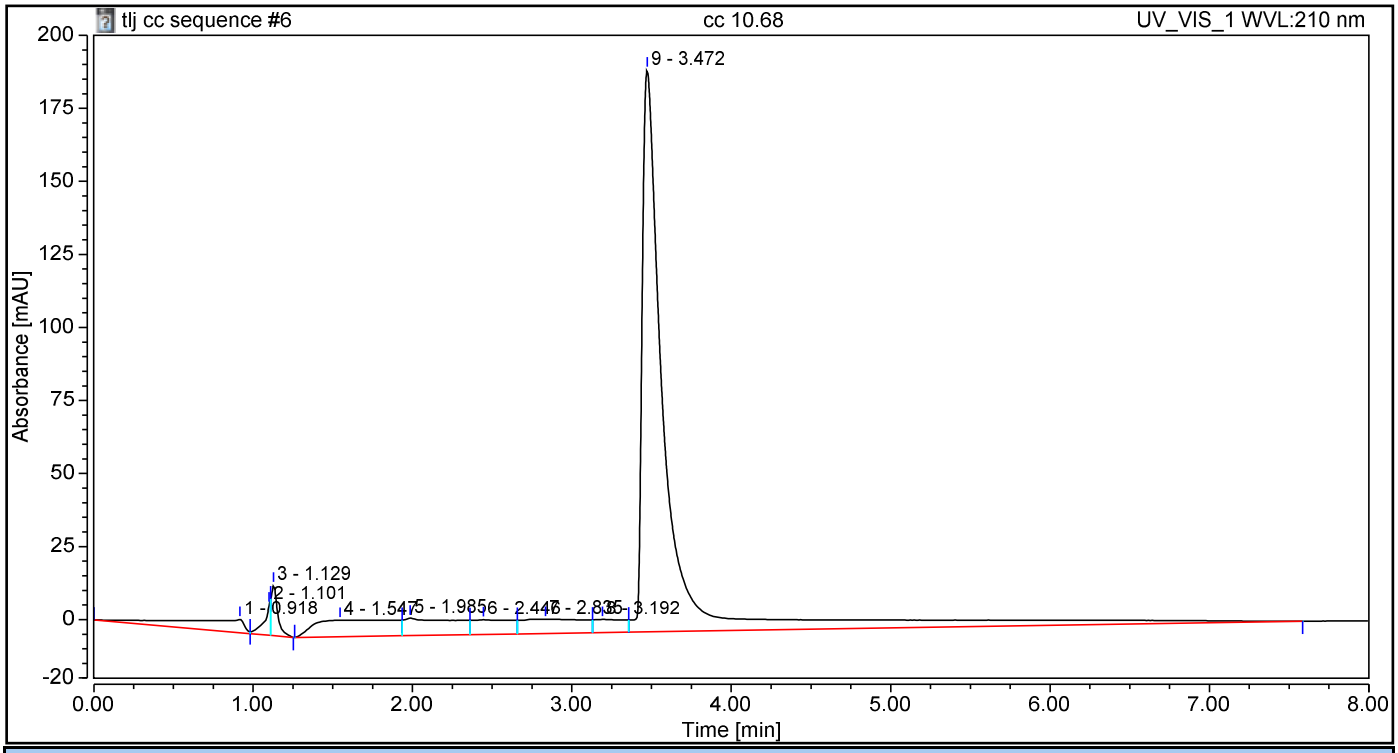
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**cc 10.68**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

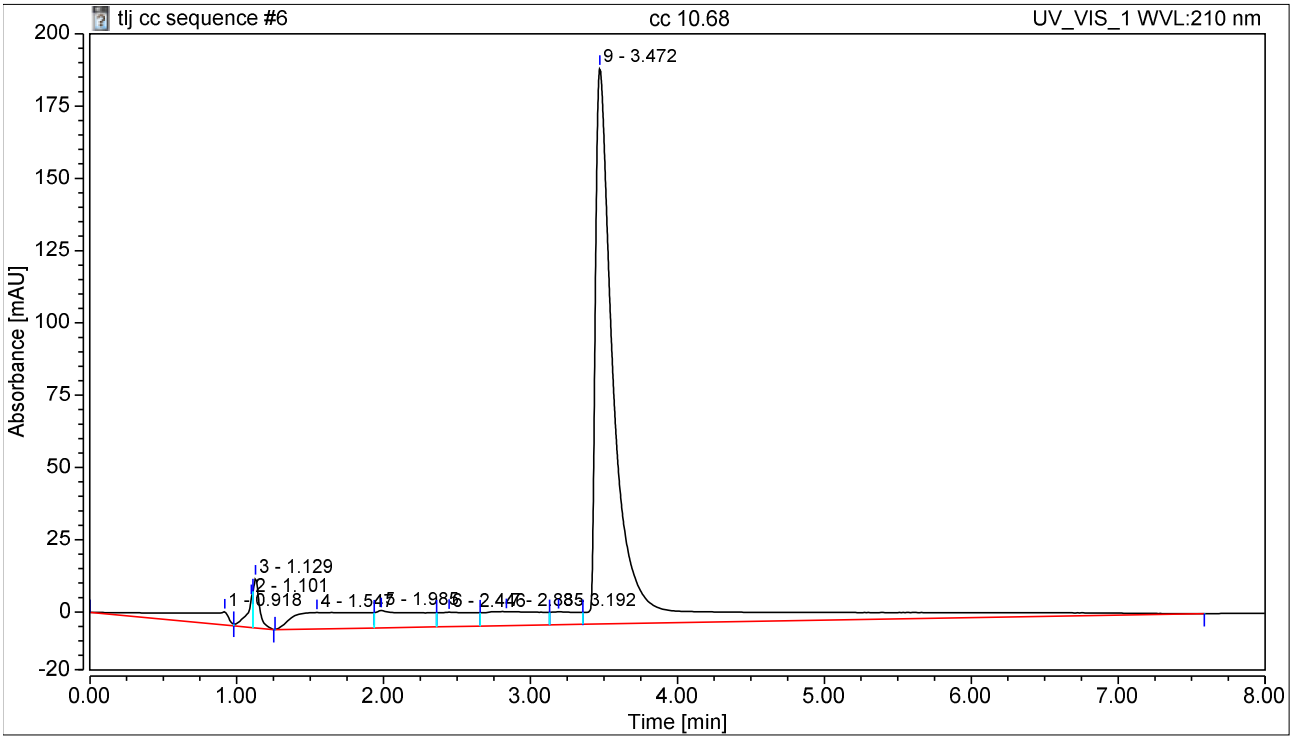
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.918	2.022	4.568	4.24	1.82	n.a.
2		1.101	0.508	10.453	1.07	4.17	n.a.
3		1.129	0.795	17.297	1.67	6.90	n.a.
4		1.547	3.247	5.677	6.81	2.26	n.a.
5		1.985	2.205	5.975	4.63	2.38	n.a.
6		2.446	1.425	5.014	2.99	2.00	n.a.
7		2.835	2.200	4.880	4.62	1.95	n.a.
8		3.192	0.982	4.482	2.06	1.79	n.a.
9		3.472	34.283	192.322	71.92	76.72	n.a.
Total:			**47.667**	**250.668**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**cc 10.68**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

Number of executed test cases: **n.a.** **Total Result:** **Passed**

Summary

Sequence Details

Name:	**tlj cc sequence**	*Created On:*	**01/Nov/23 14:48:47**
Directory:	**Instrument Data\HPLC\Sequences\CH376K\tlj**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**01/Nov/23 15:43:56**
No. of Injections:	**6**	*Updated By:*	**student**

By Component **n.a.**

No.	Injection Name	Ret.Time min [0.90..0.94] UV_VIS_1	Area mAU*min [0.90..0.94] UV_VIS_1	Height mAU [0.90..0.94] UV_VIS_1	Amount n.a. [0.90..0.94] UV_VIS_1	Rel.Area % [0.90..0.94] UV_VIS_1	Peak Type [0.90..0.94] UV_VIS_1
1	cc 10.68 ignore	0.908	0.203	3.797	n.a.	2.82	M
2	cc 21.36	0.920	0.570	4.882	n.a.	0.99	M
3	cc 32.04	0.923	0.601	6.146	n.a.	0.73	M
4	cc 42.72	0.921	0.625	6.306	n.a.	0.67	M
5	cc 53.40	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	cc 10.68	0.918	2.022	4.568	n.a.	4.24	BM

Sequence Overview

Sequence Details

Name:	**tlj w1 sequence**	*Created On:*	**25/Oct/23 16:32:30**
Directory:	**Instrument Data\HPLC\Sequences\CH376K**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Oct/23 17:24:46**
No. of Injections:	**5**	*Updated By:*	**student**

Injection Details

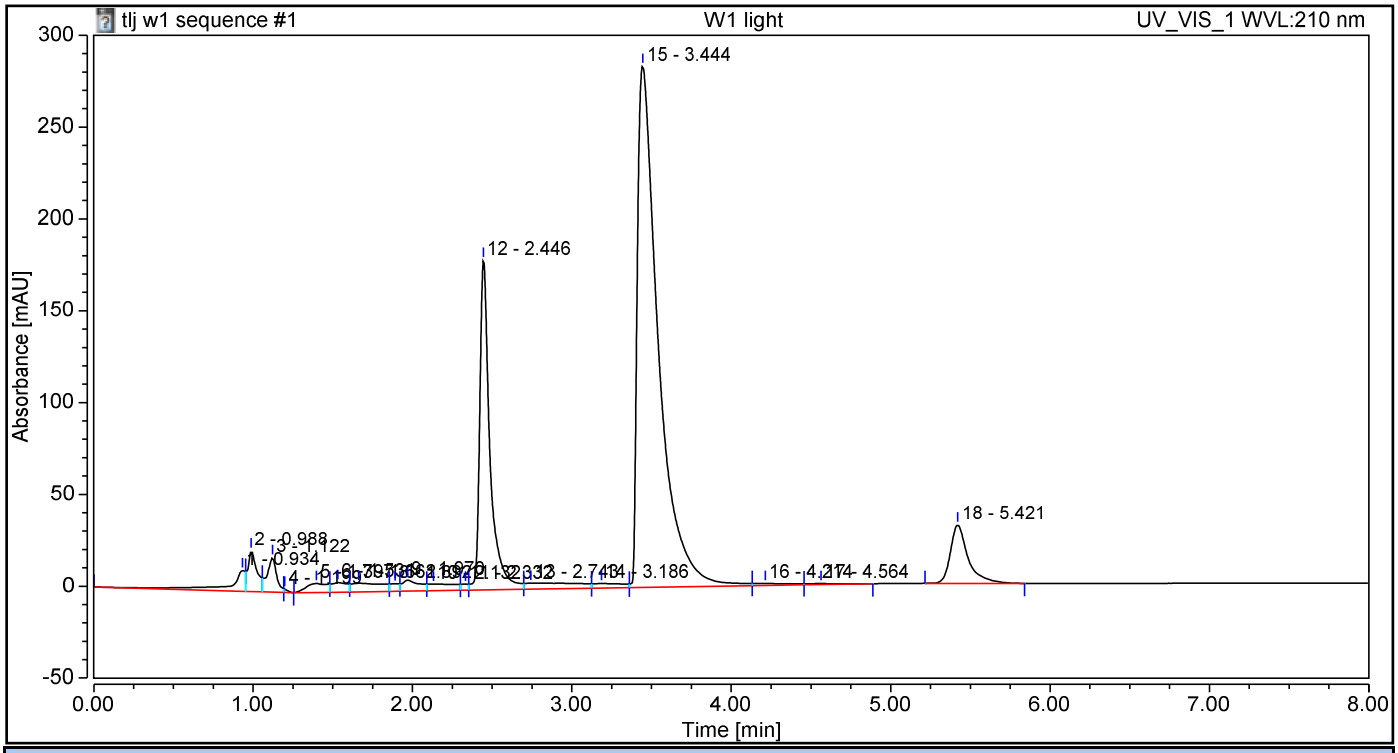
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	W1 light	0	Unknown		25/Oct/23 16:42:55	Finished
2	W1 dark	0	Unknown		25/Oct/23 16:51:29	Finished
3	W1 ignore	0	Unknown		25/Oct/23 17:01:07	Interrupted
4	W1 darkcool	0	Unknown		25/Oct/23 17:07:56	Finished
5	W1 heat	0	Unknown		25/Oct/23 17:16:45	Finished

Chromatogram and Results

Injection Details

Injection Name:	**W1 light**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 16:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

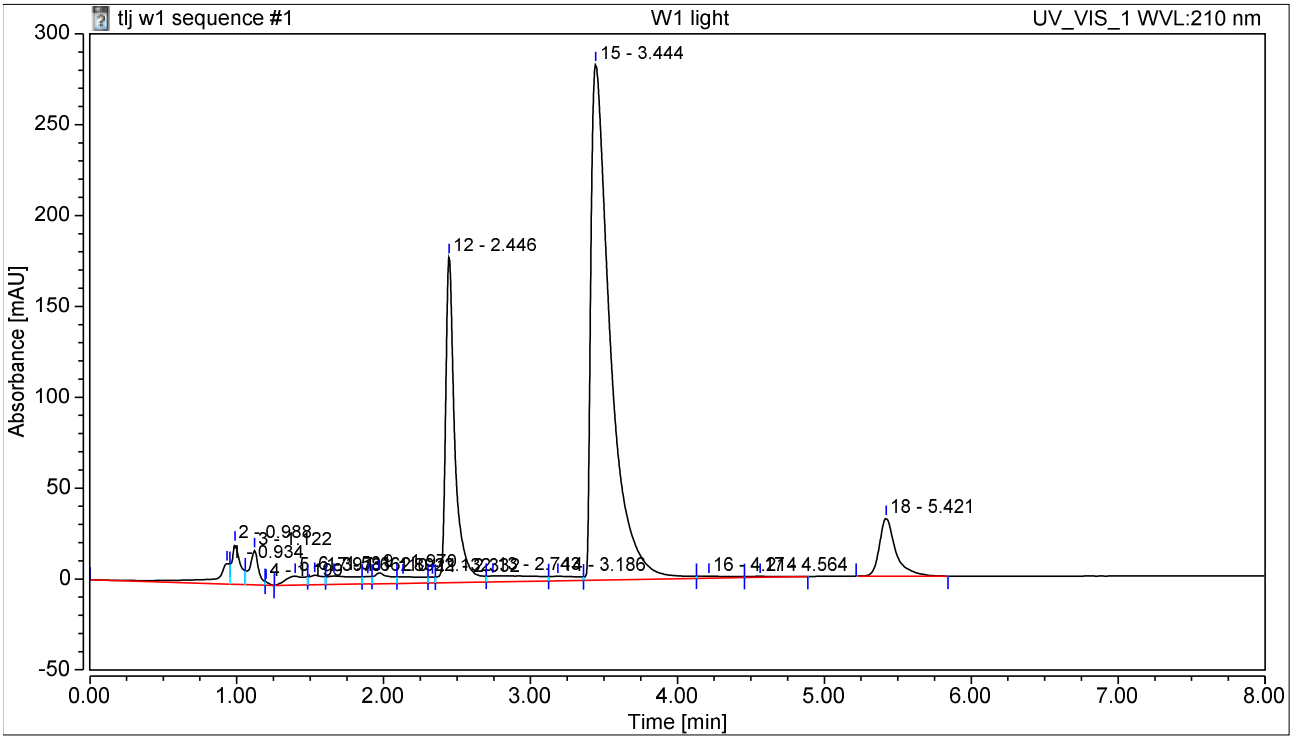
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.934	1.418	11.256	1.99	1.91	n.a.
2		0.988	1.444	22.269	2.02	3.78	n.a.
3		1.122	1.306	18.872	1.83	3.21	n.a.
4		1.199	0.056	1.871	0.08	0.32	n.a.
5		1.397	0.753	4.940	1.05	0.84	n.a.
6		1.531	0.587	5.287	0.82	0.90	n.a.
7		1.662	1.058	4.670	1.48	0.79	n.a.
8		1.892	0.270	4.157	0.38	0.71	n.a.
9		1.970	0.759	5.941	1.06	1.01	n.a.
10		2.132	0.723	3.614	1.01	0.61	n.a.
11		2.332	0.164	3.234	0.23	0.55	n.a.
12		2.446	13.362	179.471	18.71	30.49	n.a.
13		2.743	1.232	3.256	1.72	0.55	n.a.
14		3.186	0.530	2.469	0.74	0.42	n.a.
15		3.444	43.271	283.804	60.59	48.21	n.a.
16		4.214	0.278	1.108	0.39	0.19	n.a.
17		4.564	0.124	0.595	0.17	0.10	n.a.
18		5.421	4.088	31.828	5.72	5.41	n.a.
Total:			**71.423**	**588.644**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W1 light**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 16:42**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

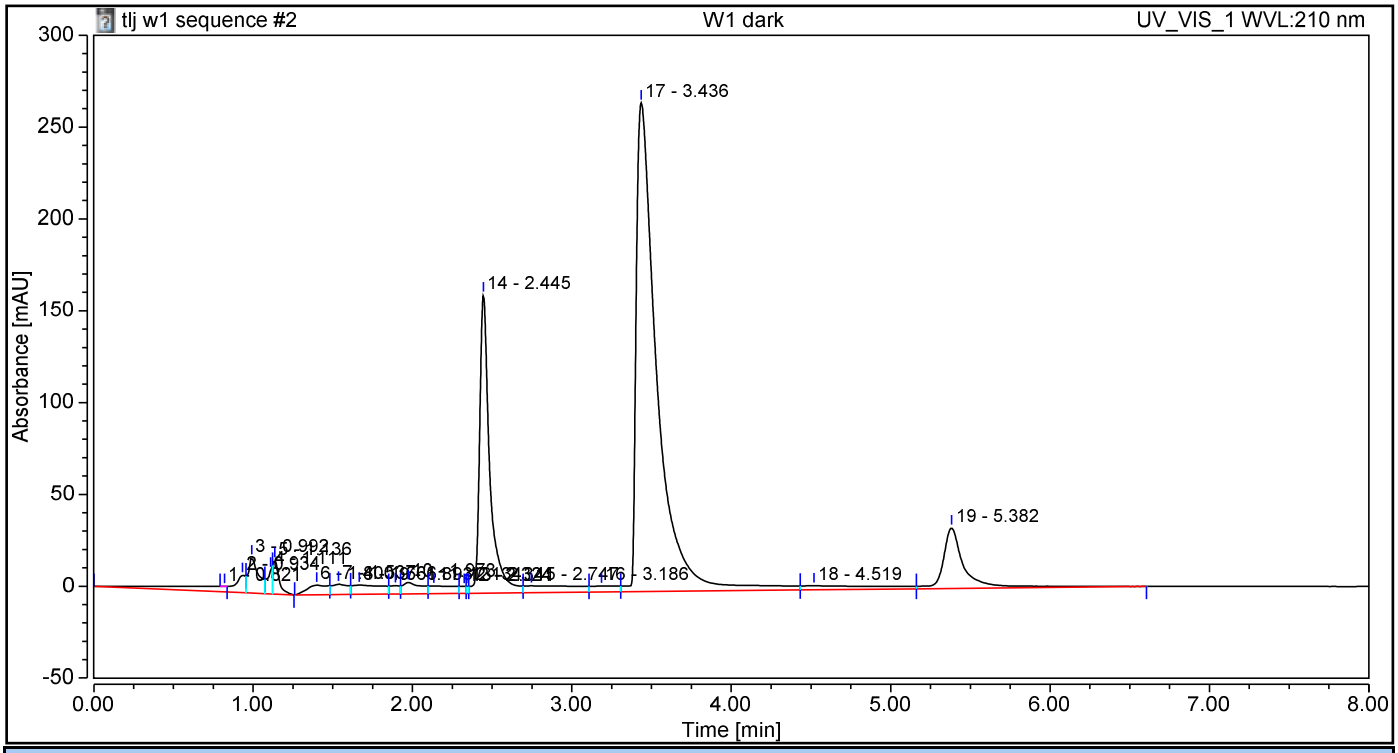
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**W1 dark**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

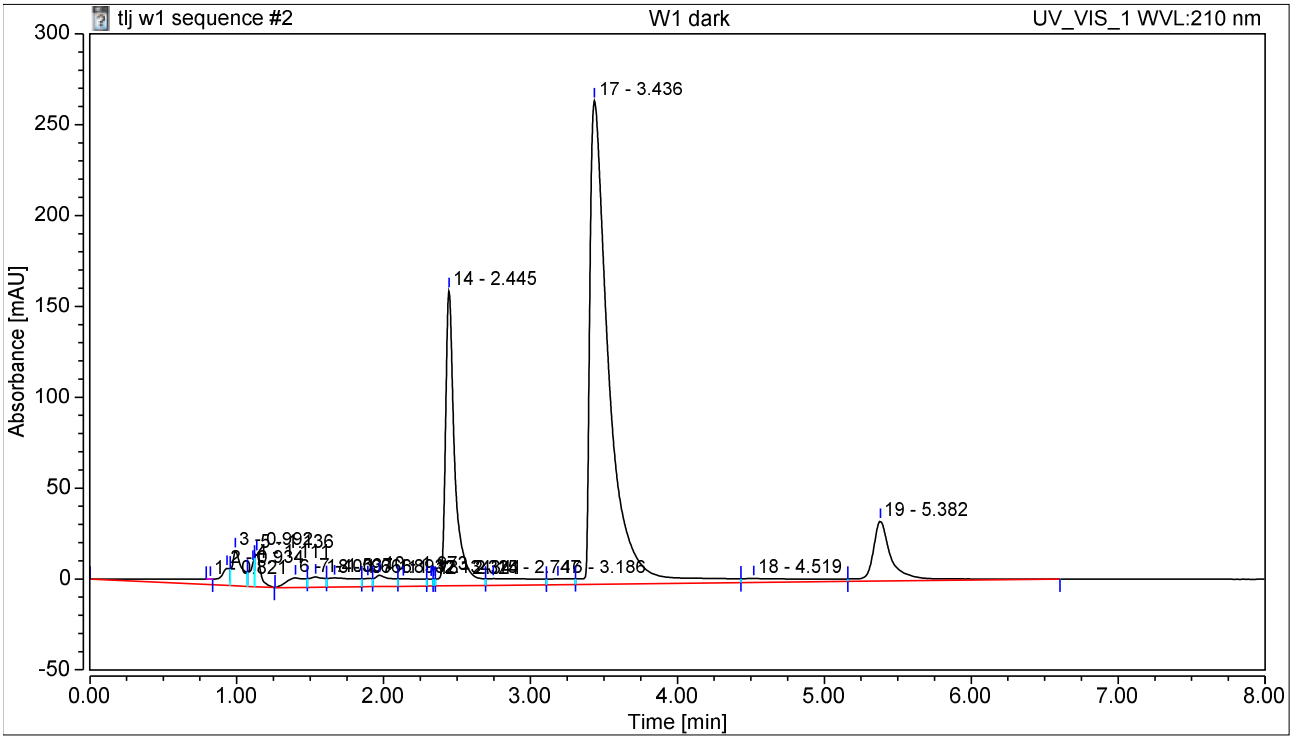
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.821	0.001	0.053	0.00	0.01	n.a.
2		0.934	1.975	9.414	2.81	1.65	n.a.
3		0.992	1.443	19.295	2.06	3.39	n.a.
4		1.111	0.511	13.009	0.73	2.29	n.a.
5		1.136	0.808	18.318	1.15	3.22	n.a.
6		1.400	0.776	5.252	1.11	0.92	n.a.
7		1.537	0.667	5.631	0.95	0.99	n.a.
8		1.666	1.101	4.976	1.57	0.87	n.a.
9		1.893	0.326	4.522	0.46	0.79	n.a.
10		1.973	0.838	6.236	1.19	1.10	n.a.
11		2.134	0.765	4.096	1.09	0.72	n.a.
12		2.324	0.170	3.789	0.24	0.67	n.a.
13		2.341	0.056	3.753	0.08	0.66	n.a.
14		2.445	12.129	162.499	17.28	28.55	n.a.
15		2.747	1.404	3.688	2.00	0.65	n.a.
16		3.186	0.616	3.216	0.88	0.57	n.a.
17		3.436	40.210	266.101	57.29	46.76	n.a.
18		4.519	1.270	2.233	1.81	0.39	n.a.
19		5.382	5.119	33.009	7.29	5.80	n.a.
Total:			**70.186**	**569.089**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W1 dark**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

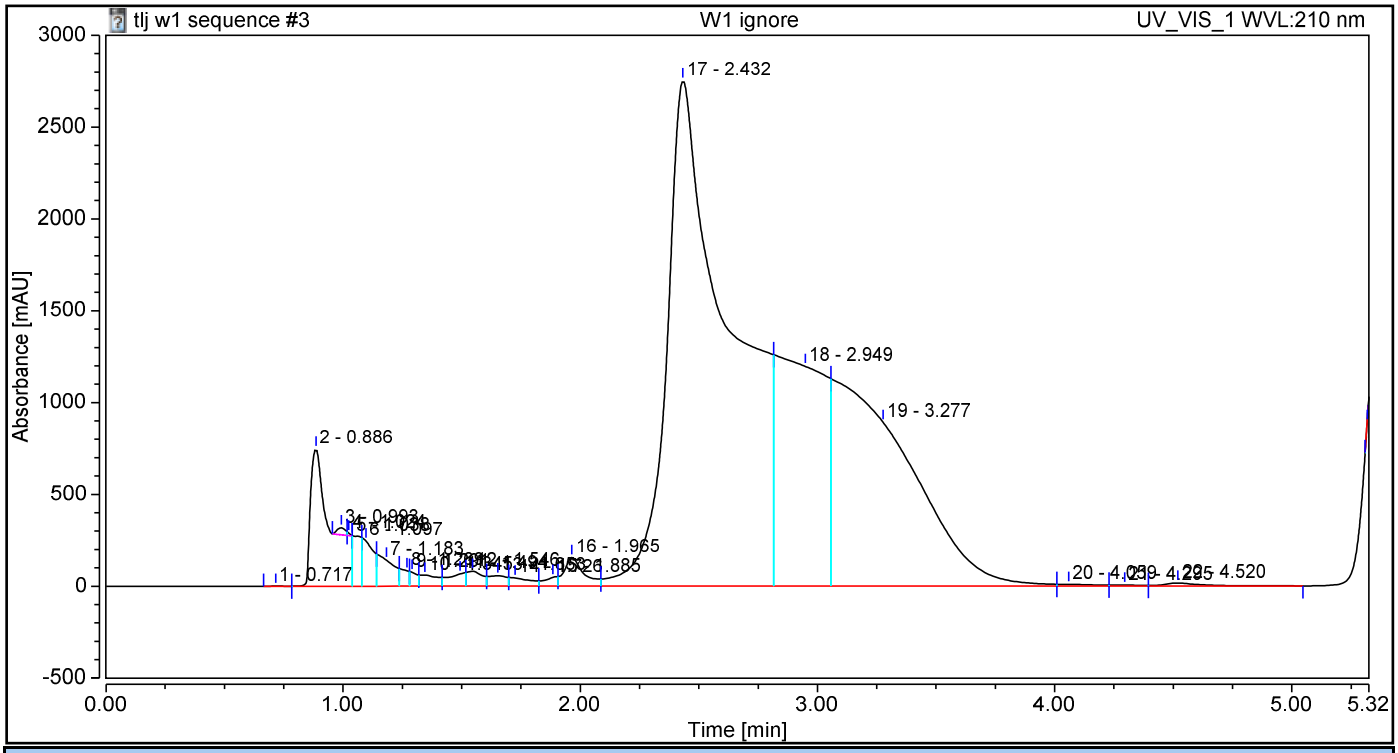
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**W1 ignore**	*Run Time (min):*	**5.32**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 17:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.717	0.020	0.247	0.00	0.00	n.a.
2		0.886	74.792	747.670	4.34	10.67	n.a.
3		0.993	1.553	38.137	0.09	0.54	n.a.
4		1.024	0.200	13.691	0.01	0.20	n.a.
5		1.038	11.273	273.793	0.65	3.91	n.a.
6		1.097	13.460	247.125	0.78	3.53	n.a.
7		1.183	13.039	142.188	0.76	2.03	n.a.
8		1.269	3.739	84.515	0.22	1.21	n.a.
9		1.291	2.788	75.875	0.16	1.08	n.a.
10		1.345	5.312	60.754	0.31	0.87	n.a.
11		1.494	5.711	66.963	0.33	0.96	n.a.
12		1.546	6.104	81.596	0.35	1.16	n.a.
13		1.653	5.001	56.895	0.29	0.81	n.a.
14		1.726	4.712	44.865	0.27	0.64	n.a.
15		1.885	3.173	48.264	0.18	0.69	n.a.
16		1.965	14.751	156.112	0.86	2.23	n.a.
17		2.432	837.826	2751.171	48.64	39.26	n.a.
18		2.949	290.015	1196.442	16.84	17.07	n.a.
19		3.277	423.973	890.456	24.62	12.71	n.a.
20		4.059	1.543	8.918	0.09	0.13	n.a.
21		4.295	0.662	4.527	0.04	0.06	n.a.

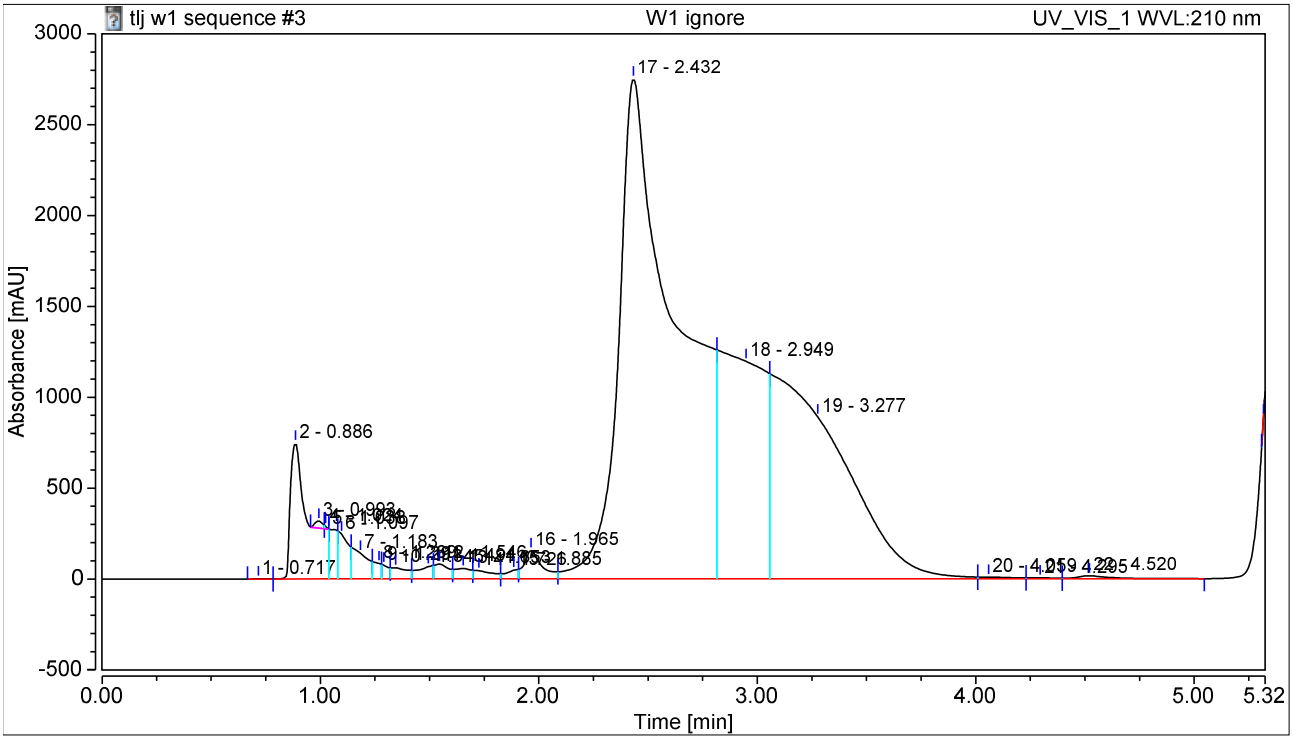
22		4.520	2.714	15.762	0.16	0.22	n.a.
23		5.317	0.015	1.775	0.00	0.03	n.a.
Total:			**1722.378**	**7007.741**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W1 ignore**	*Run Time (min):*	**5.32**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 17:01**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

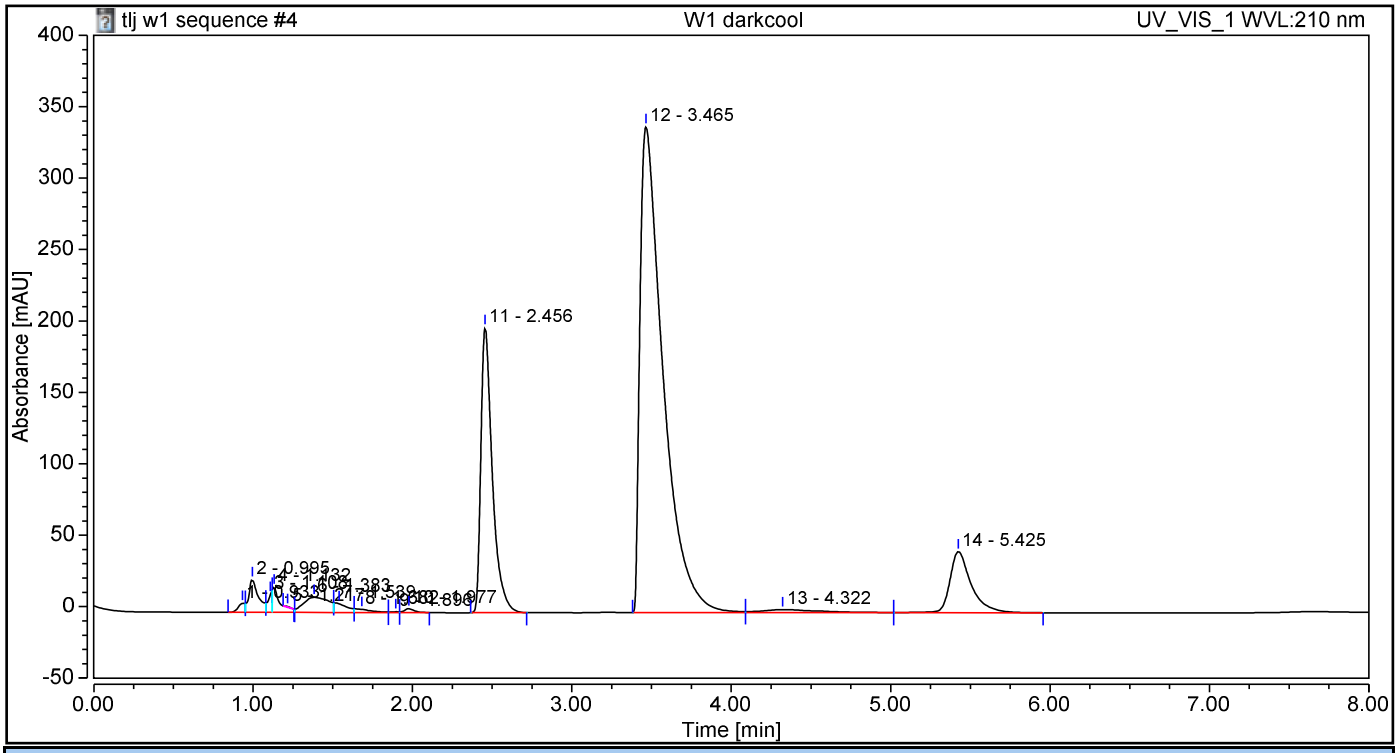
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**W1 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

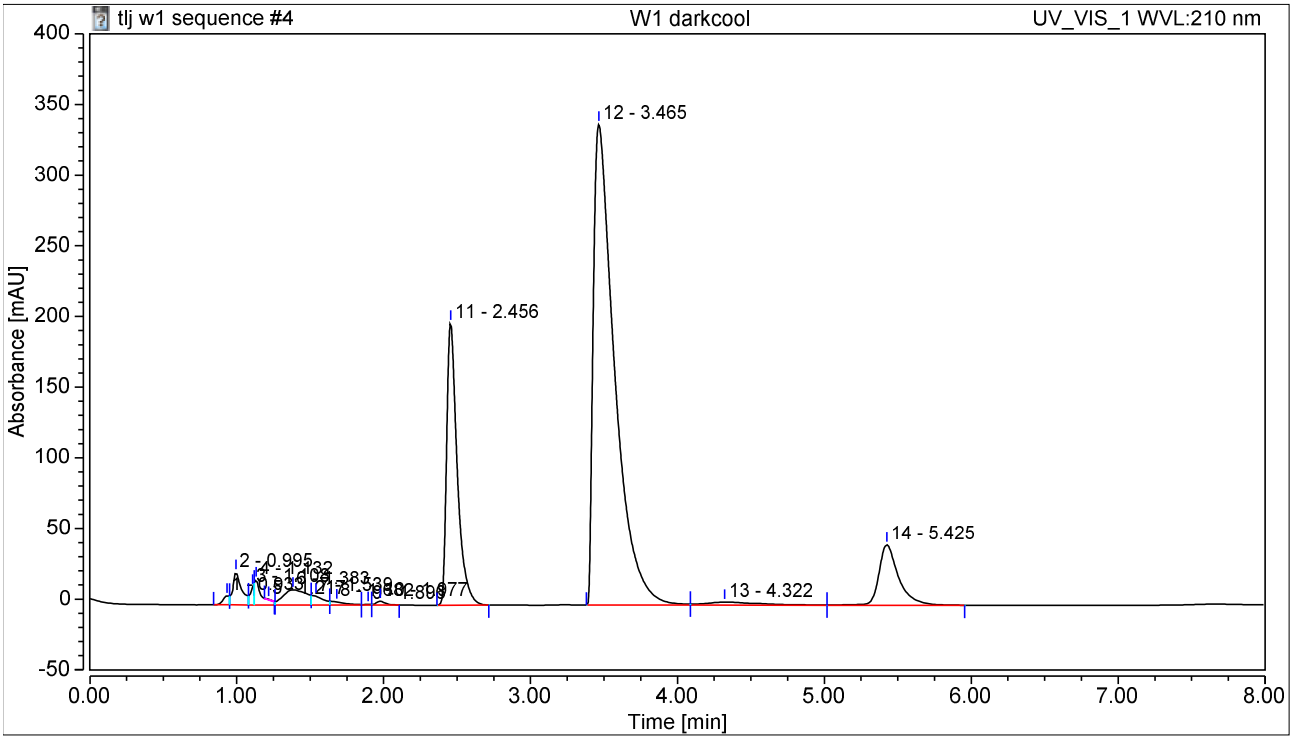
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.933	0.315	6.326	0.36	0.95	n.a.
2		0.995	1.576	22.969	1.80	3.44	n.a.
3		1.108	0.413	12.637	0.47	1.89	n.a.
4		1.132	0.982	17.862	1.12	2.68	n.a.
5		1.217	0.017	0.455	0.02	0.07	n.a.
6		1.383	1.935	10.636	2.21	1.59	n.a.
7		1.539	0.594	6.199	0.68	0.93	n.a.
8		1.682	0.275	2.187	0.31	0.33	n.a.
9		1.896	0.028	0.525	0.03	0.08	n.a.
10		1.977	0.186	2.618	0.21	0.39	n.a.
11		2.456	16.644	199.657	19.00	29.92	n.a.
12		3.465	57.088	340.326	65.17	51.00	n.a.
13		4.322	0.915	2.182	1.04	0.33	n.a.
14		5.425	6.628	42.770	7.57	6.41	n.a.
Total:			**87.597**	**667.350**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W1 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

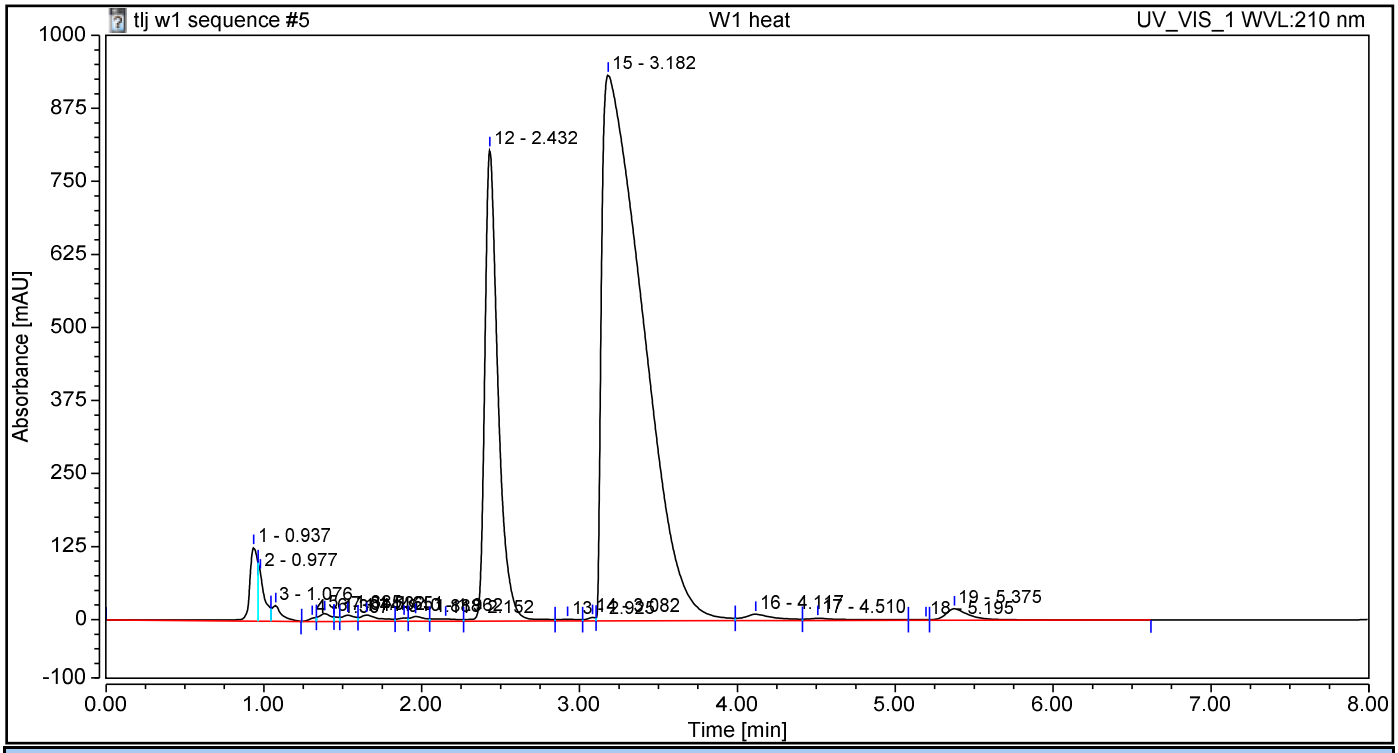
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**W1 heat**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

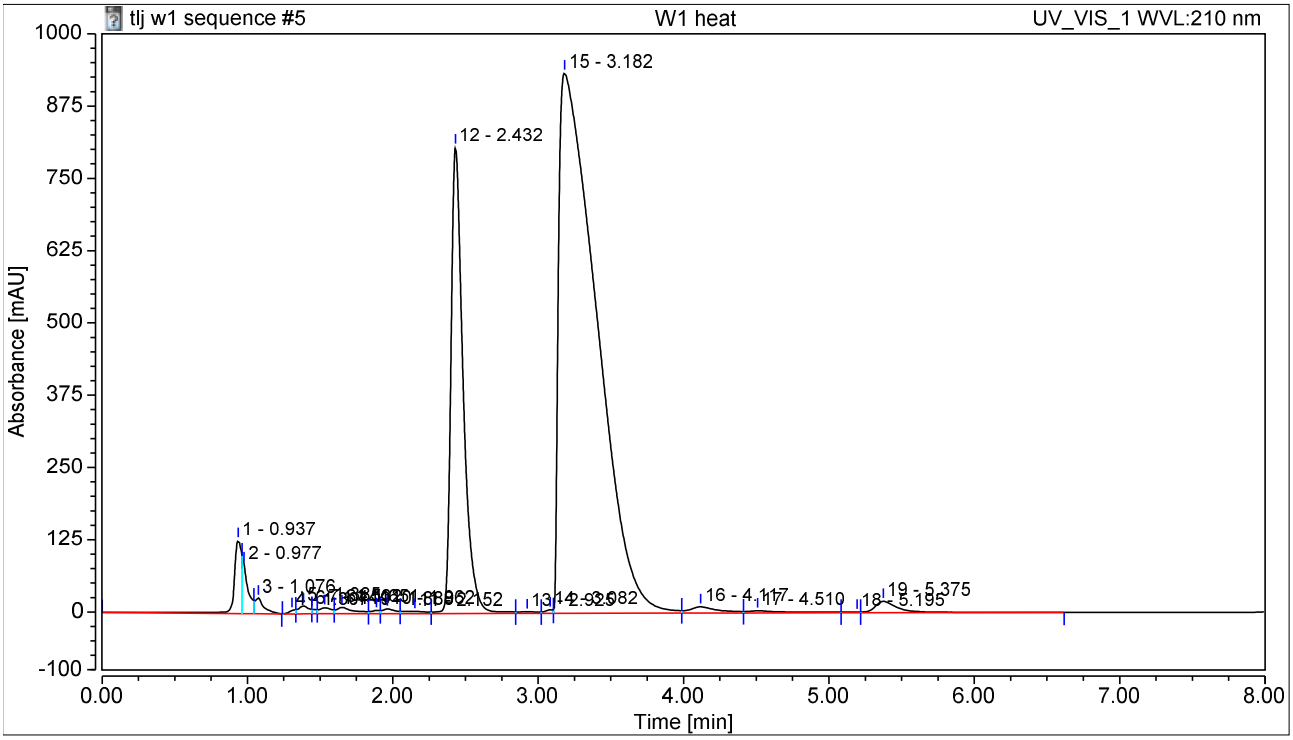
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.937	7.428	126.378	1.92	6.05	n.a.
2		0.977	4.132	84.474	1.07	4.04	n.a.
3		1.076	1.939	26.940	0.50	1.29	n.a.
4		1.307	0.306	5.622	0.08	0.27	n.a.
5		1.385	1.135	13.429	0.29	0.64	n.a.
6		1.444	0.269	7.633	0.07	0.37	n.a.
7		1.532	0.999	10.476	0.26	0.50	n.a.
8		1.651	1.493	10.900	0.39	0.52	n.a.
9		1.888	0.397	5.638	0.10	0.27	n.a.
10		1.962	0.824	8.095	0.21	0.39	n.a.
11		2.152	0.758	3.985	0.20	0.19	n.a.
12		2.432	78.727	807.344	20.39	38.63	n.a.
13		2.925	0.448	2.800	0.12	0.13	n.a.
14		3.082	0.377	6.107	0.10	0.29	n.a.
15		3.182	279.231	934.545	72.32	44.71	n.a.
16		4.117	2.437	10.923	0.63	0.52	n.a.
17		4.510	1.278	3.825	0.33	0.18	n.a.
18		5.195	0.167	1.422	0.04	0.07	n.a.
19		5.375	3.748	19.644	0.97	0.94	n.a.
Total:			**386.093**	**2090.182**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W1 heat**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

Number of executed test cases: **n.a.** **Total Result:** **Passed**

Summary

Sequence Details

Name:	**tlj w1 sequence**	*Created On:*	**25/Oct/23 16:32:30**
Directory:	**Instrument Data\HPLC\Sequences\CH376K\tlj**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Oct/23 17:24:46**
No. of Injections:	**5**	*Updated By:*	**student**

By Component **n.a.**

No.	Injection Name	Ret.Time min [0.91..0.96] UV_VIS_1	Area mAU*min [0.91..0.96] UV_VIS_1	Height mAU [0.91..0.96] UV_VIS_1	Amount n.a. [0.91..0.96] UV_VIS_1	Rel.Area % [0.91..0.96] UV_VIS_1	Peak Type [0.91..0.96] UV_VIS_1
1	W1 light	0.934	1.418	11.256	n.a.	1.99	BM
2	W1 dark	0.934	1.975	9.414	n.a.	2.81	BM
3	W1 ignore	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	W1 darkcool	0.933	0.315	6.326	n.a.	0.36	M
5	W1 heat	0.937	7.428	126.378	n.a.	1.92	BM

Sequence Overview

Sequence Details

Name:	**tlj w2 sequence**	*Created On:*	**25/Oct/23 15:29:15**
Directory:	**Instrument Data\HPLC\Sequences\CH376K**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Oct/23 16:31:23**
No. of Injections:	**5**	*Updated By:*	**student**

Injection Details

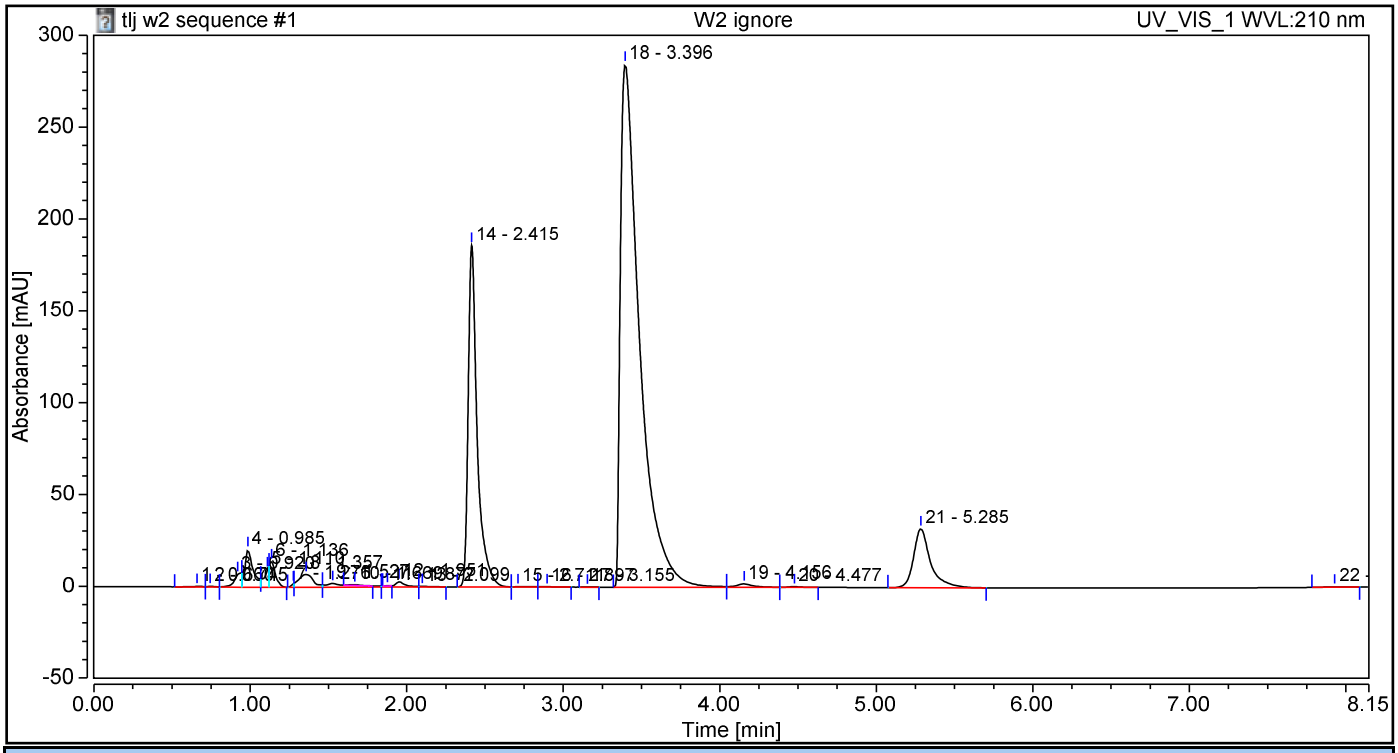
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	W2 ignore	0	Unknown		25/Oct/23 15:31:15	Interrupted
2	W2 light	1	Unknown		25/Oct/23 15:42:47	Finished
3	W2 dark	2	Unknown		25/Oct/23 15:52:35	Finished
4	W2 darkcool	3	Unknown		25/Oct/23 16:03:27	Finished
5	W2 heat	3	Unknown		25/Oct/23 16:23:22	Finished

Chromatogram and Results

Injection Details

Injection Name:	**W2 ignore**	*Run Time (min):*	**8.15**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.660	0.032	0.325	0.05	0.06	n.a.
2		0.745	0.025	0.406	0.04	0.07	n.a.
3		0.920	0.399	6.846	0.65	1.20	n.a.
4		0.985	1.273	20.446	2.07	3.57	n.a.
5		1.110	0.363	9.526	0.59	1.66	n.a.
6		1.136	0.617	14.026	1.00	2.45	n.a.
7		1.276	0.036	1.885	0.06	0.33	n.a.
8		1.357	0.753	7.041	1.22	1.23	n.a.
9		1.527	0.398	2.078	0.65	0.36	n.a.
10		1.669	0.032	0.459	0.05	0.08	n.a.
11		1.877	0.007	0.224	0.01	0.04	n.a.
12		1.951	0.253	2.919	0.41	0.51	n.a.
13		2.099	0.035	0.386	0.06	0.07	n.a.
14		2.415	12.468	186.041	20.26	32.49	n.a.
15		2.711	0.031	0.234	0.05	0.04	n.a.
16		2.897	0.022	0.189	0.04	0.03	n.a.
17		3.155	0.009	0.155	0.02	0.03	n.a.
18		3.396	40.443	284.908	65.72	49.75	n.a.
19		4.156	0.237	1.862	0.39	0.33	n.a.
20		4.477	0.035	0.352	0.06	0.06	n.a.
21		5.285	4.040	32.141	6.56	5.61	n.a.

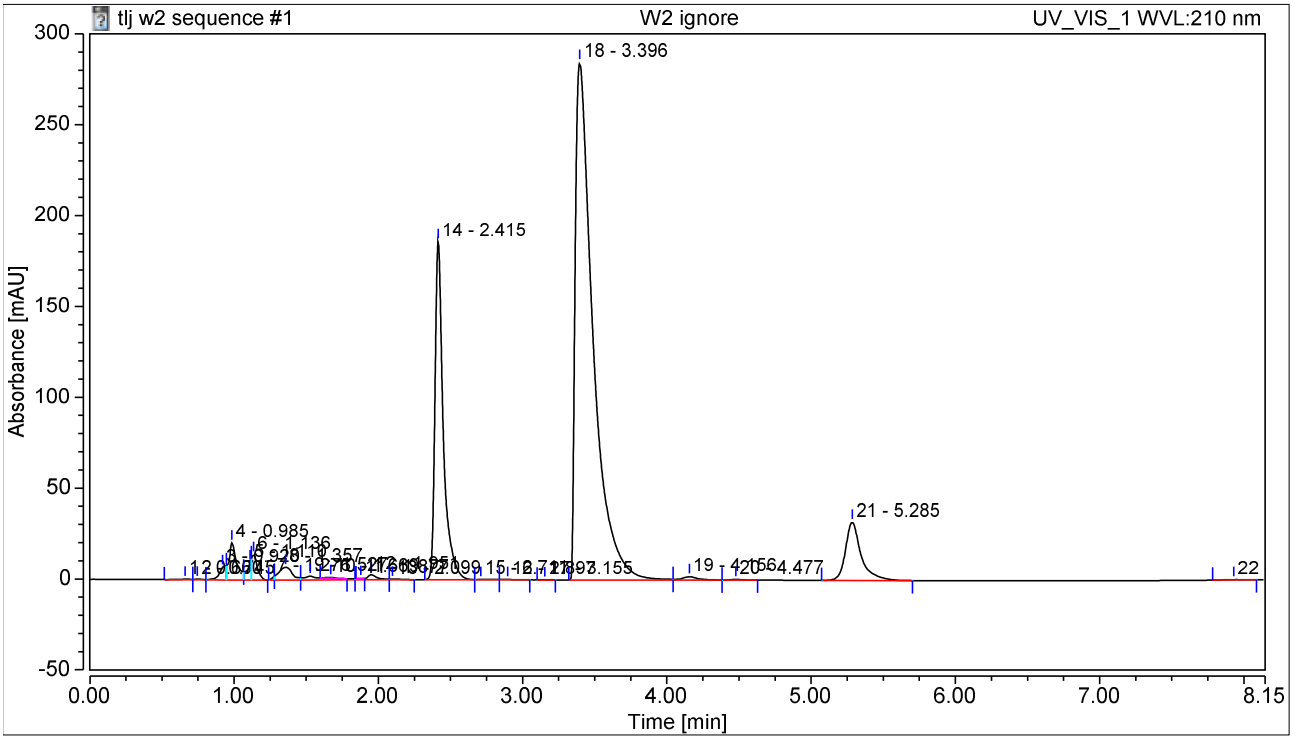
22		7.929	0.032	0.235	0.05	0.04	n.a.
Total:			**61.541**	**572.686**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W2 ignore**	*Run Time (min):*	**8.15**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

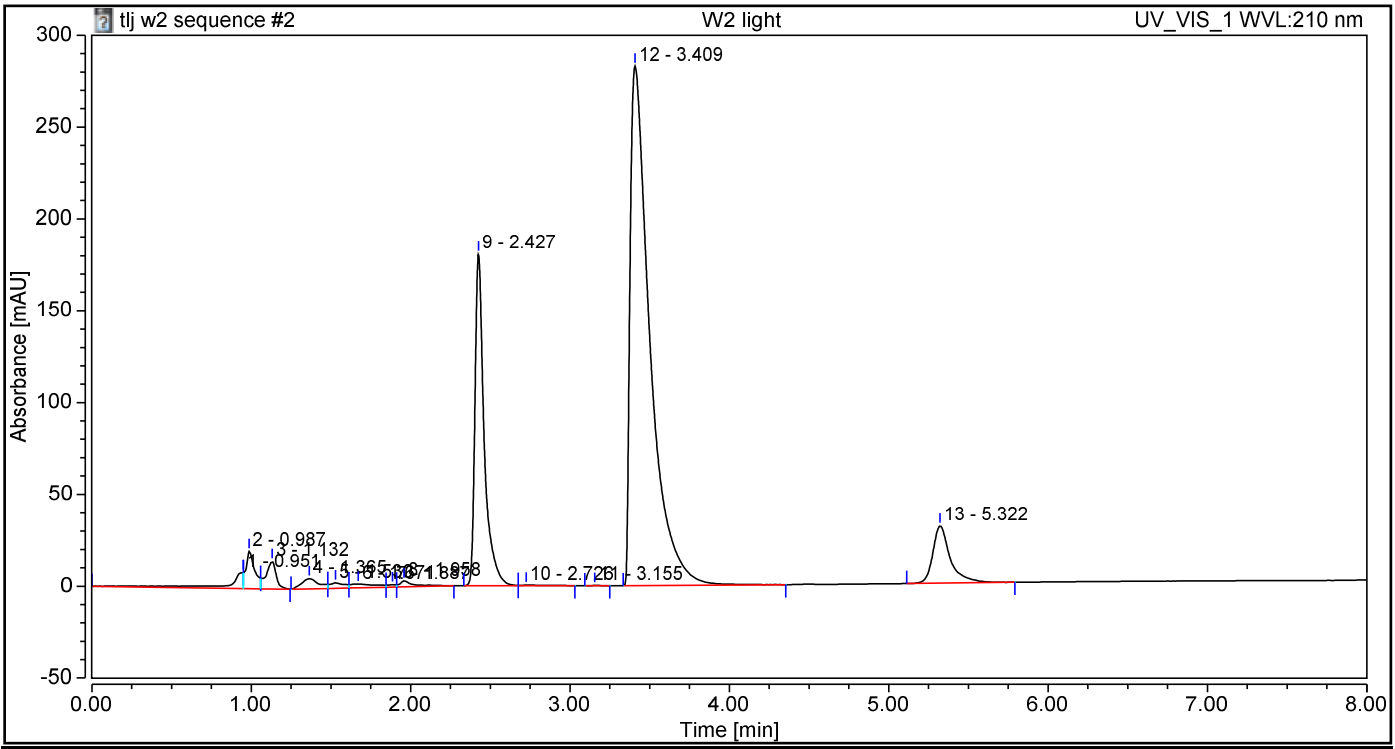
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**W2 light**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

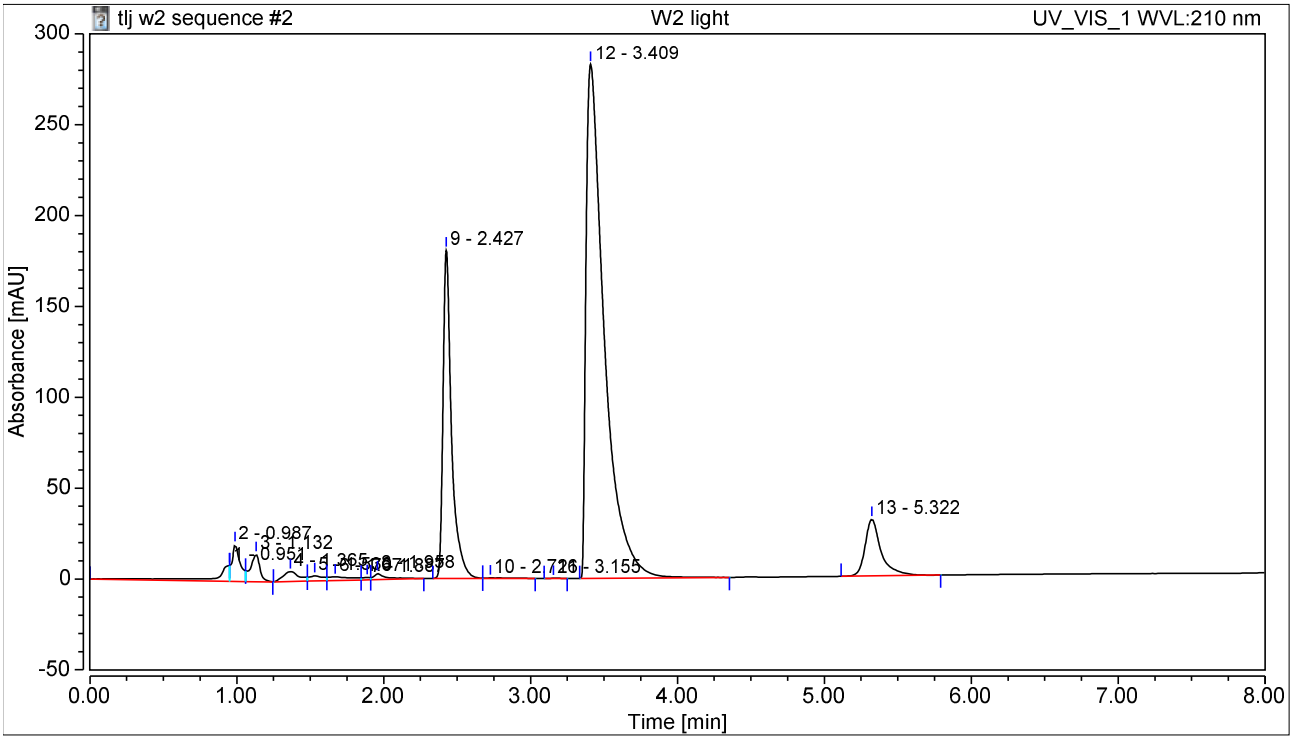
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.951	0.997	8.607	1.61	1.55	n.a.
2		0.987	1.284	20.248	2.07	3.65	n.a.
3		1.132	1.100	15.033	1.78	2.71	n.a.
4		1.365	0.690	5.490	1.11	0.99	n.a.
5		1.530	0.310	2.906	0.50	0.52	n.a.
6		1.671	0.365	2.056	0.59	0.37	n.a.
7		1.887	0.079	1.301	0.13	0.23	n.a.
8		1.958	0.325	3.177	0.52	0.57	n.a.
9		2.427	12.160	180.749	19.62	32.62	n.a.
10		2.726	0.061	0.283	0.10	0.05	n.a.
11		3.155	0.010	0.152	0.02	0.03	n.a.
12		3.409	40.652	282.894	65.58	51.05	n.a.
13		5.322	3.952	31.212	6.38	5.63	n.a.
Total:			**61.984**	**554.111**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W2 light**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

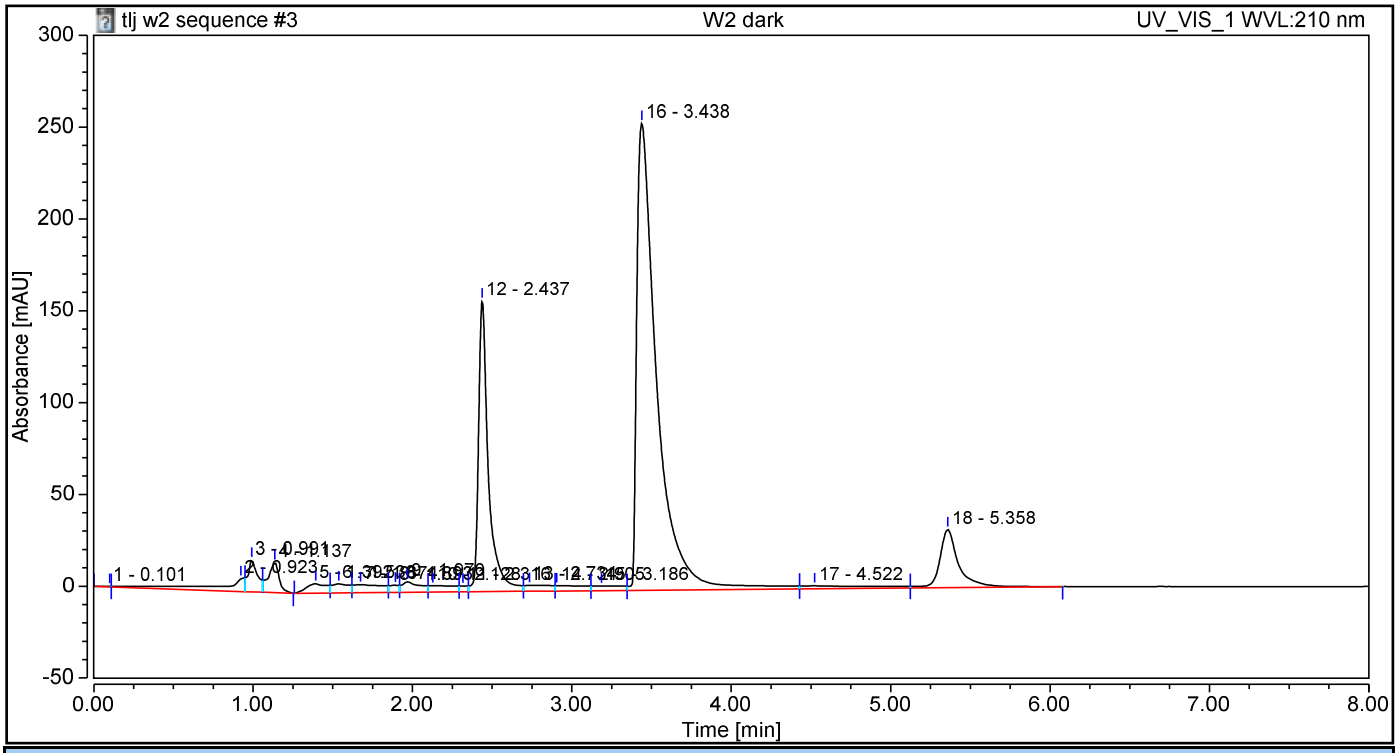
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**W2 dark**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 15:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

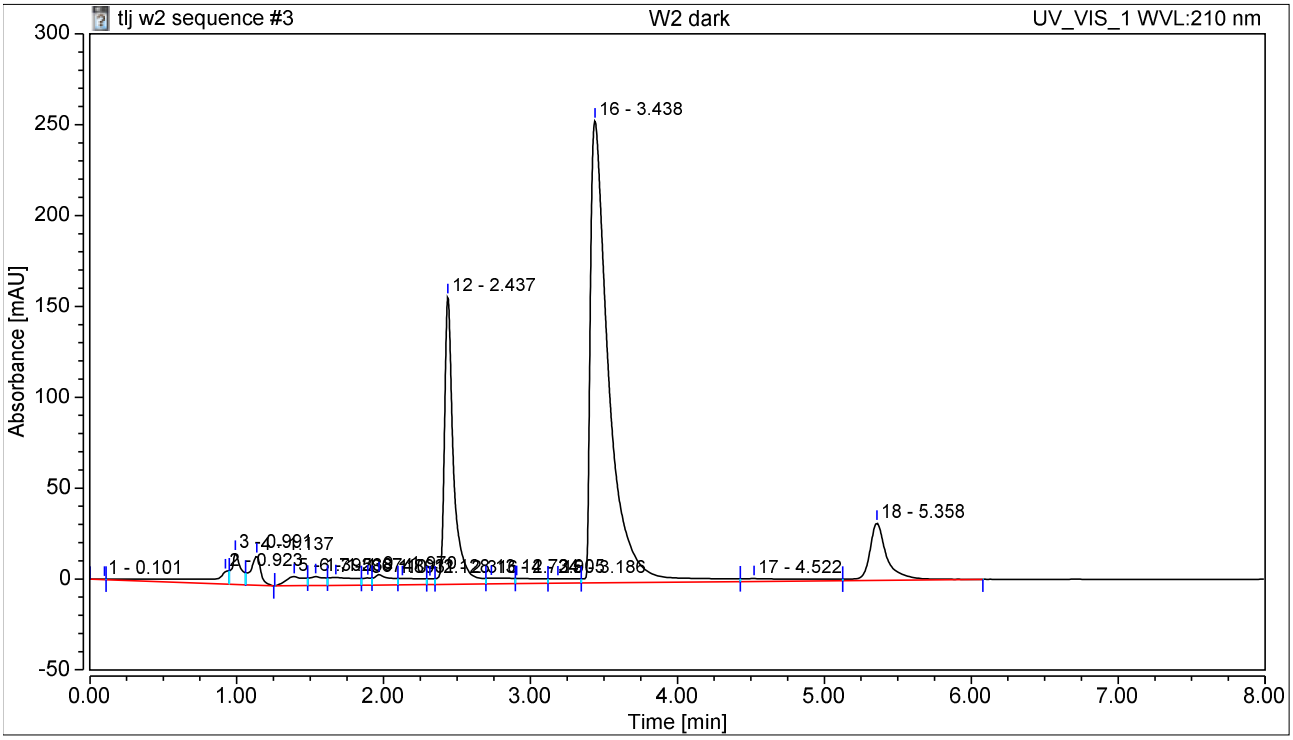
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.101	0.020	0.334	0.03	0.06	n.a.
2		0.923	1.558	6.932	2.45	1.32	n.a.
3		0.991	1.188	17.217	1.86	3.27	n.a.
4		1.137	1.290	16.326	2.03	3.10	n.a.
5		1.392	0.743	5.062	1.17	0.96	n.a.
6		1.538	0.604	4.967	0.95	0.94	n.a.
7		1.674	0.920	4.331	1.44	0.82	n.a.
8		1.893	0.270	3.930	0.42	0.75	n.a.
9		1.970	0.758	5.682	1.19	1.08	n.a.
10		2.128	0.650	3.534	1.02	0.67	n.a.
11		2.316	0.184	3.232	0.29	0.61	n.a.
12		2.437	11.515	158.313	18.08	30.10	n.a.
13		2.734	0.618	3.228	0.97	0.61	n.a.
14		2.905	0.606	2.929	0.95	0.56	n.a.
15		3.186	0.552	2.575	0.87	0.49	n.a.
16		3.438	37.109	254.325	58.27	48.35	n.a.
17		4.522	0.799	1.594	1.25	0.30	n.a.
18		5.358	4.305	31.529	6.76	5.99	n.a.
Total:			**63.689**	**526.040**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W2 dark**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 15:52**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

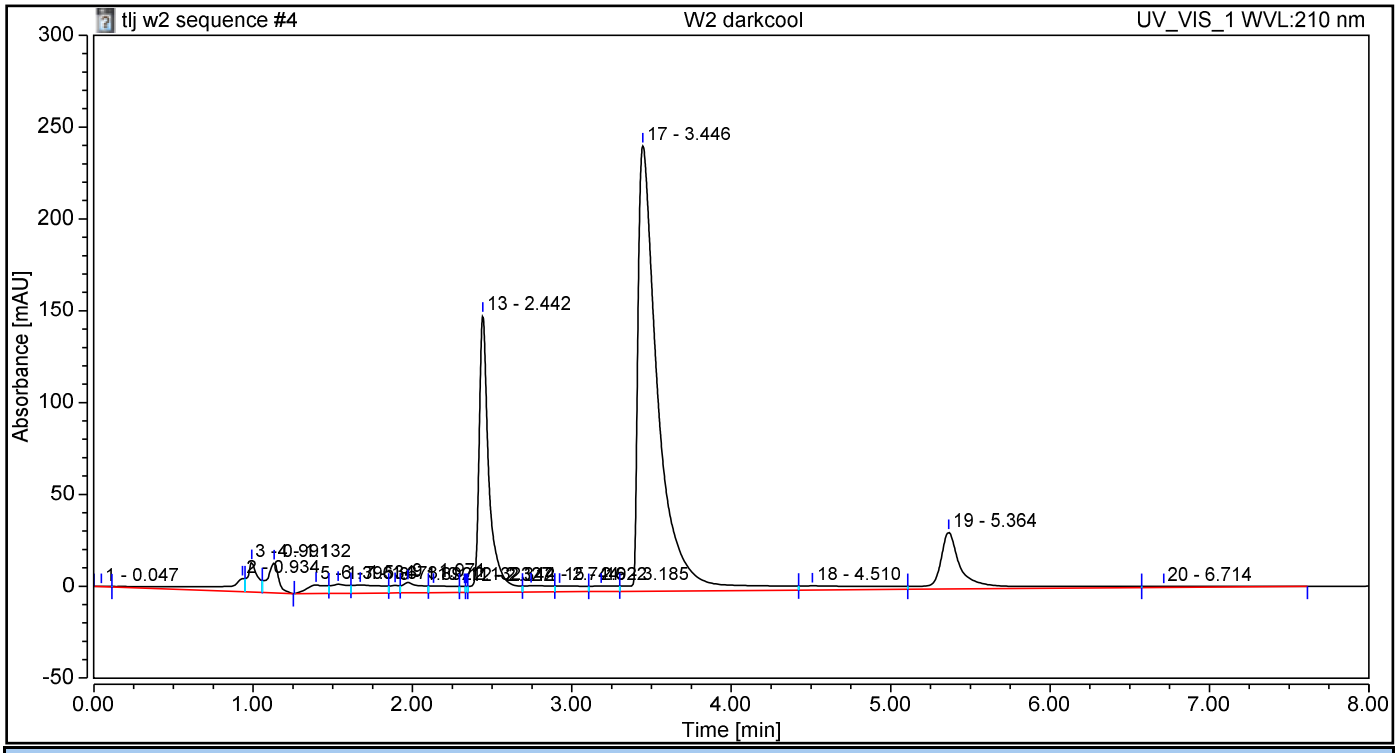
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**W2 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 16:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

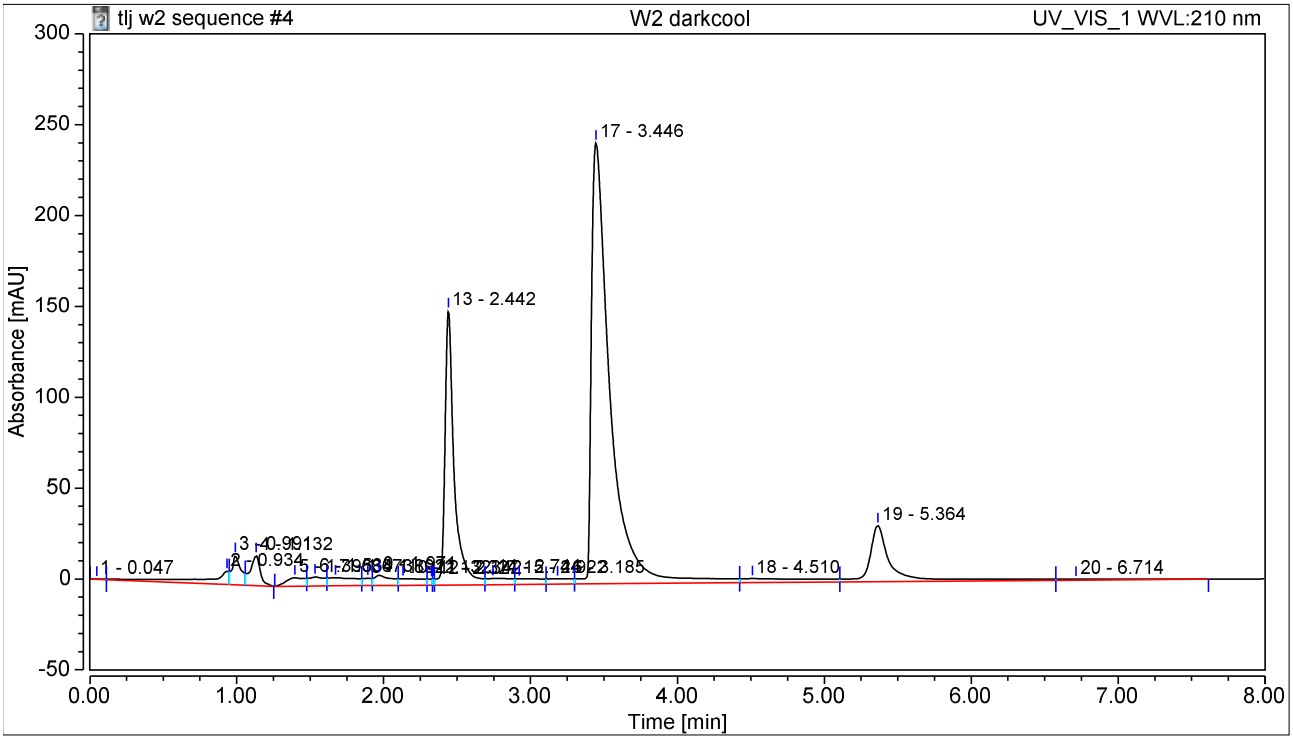
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.047	0.020	0.168	0.03	0.03	n.a.
2		0.934	1.550	7.153	2.42	1.40	n.a.
3		0.991	1.115	16.177	1.74	3.16	n.a.
4		1.132	1.290	16.552	2.02	3.24	n.a.
5		1.396	0.663	4.639	1.04	0.91	n.a.
6		1.534	0.620	4.981	0.97	0.97	n.a.
7		1.673	0.981	4.439	1.53	0.87	n.a.
8		1.892	0.283	4.057	0.44	0.79	n.a.
9		1.971	0.770	5.683	1.20	1.11	n.a.
10		2.132	0.686	3.661	1.07	0.72	n.a.
11		2.327	0.127	3.383	0.20	0.66	n.a.
12		2.342	0.048	3.371	0.07	0.66	n.a.
13		2.442	11.052	150.970	17.28	29.52	n.a.
14		2.744	0.664	3.394	1.04	0.66	n.a.
15		2.922	0.646	3.170	1.01	0.62	n.a.
16		3.185	0.568	3.013	0.89	0.59	n.a.
17		3.446	35.783	242.651	55.96	47.45	n.a.
18		4.510	1.297	2.268	2.03	0.44	n.a.
19		5.364	5.414	30.918	8.47	6.05	n.a.
20		6.714	0.367	0.684	0.57	0.13	n.a.
Total:			**63.944**	**511.331**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W2 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 16:03**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

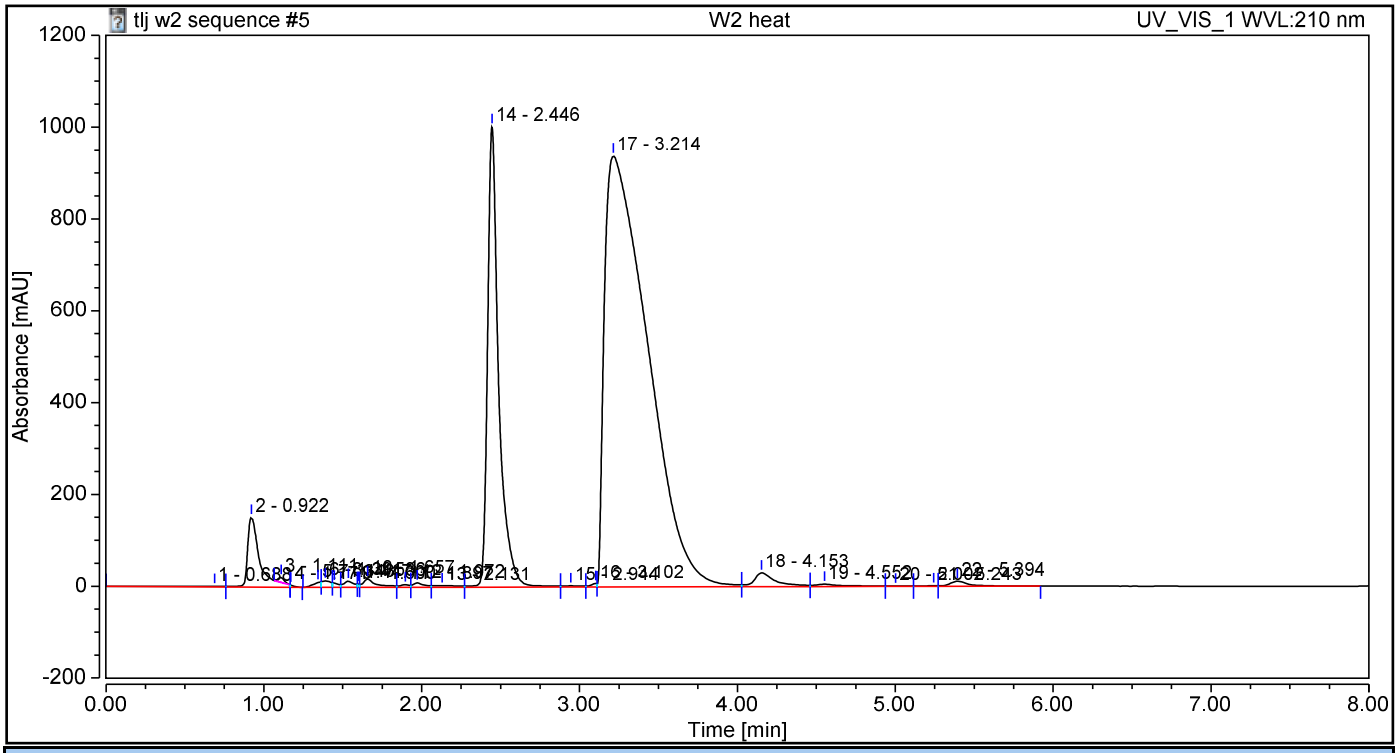
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**W2 heat**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 16:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.688	0.572	1.420	0.14	0.06	n.a.
2		0.922	13.544	152.297	3.31	6.73	n.a.
3		1.111	0.474	11.277	0.12	0.50	n.a.
4		1.171	0.145	5.075	0.04	0.22	n.a.
5		1.343	0.644	10.534	0.16	0.47	n.a.
6		1.391	0.922	14.223	0.23	0.63	n.a.
7		1.447	0.406	9.332	0.10	0.41	n.a.
8		1.536	0.995	13.393	0.24	0.59	n.a.
9		1.600	0.090	6.739	0.02	0.30	n.a.
10		1.657	1.749	18.161	0.43	0.80	n.a.
11		1.897	0.398	5.825	0.10	0.26	n.a.
12		1.972	0.757	9.452	0.19	0.42	n.a.
13		2.131	0.642	3.436	0.16	0.15	n.a.
14		2.446	82.209	1003.556	20.12	44.37	n.a.
15		2.944	0.343	2.536	0.08	0.11	n.a.
16		3.102	0.325	7.249	0.08	0.32	n.a.
17		3.214	296.705	938.998	72.62	41.51	n.a.
18		4.153	4.735	30.043	1.16	1.33	n.a.
19		4.552	1.069	5.157	0.26	0.23	n.a.
20		5.002	0.148	0.897	0.04	0.04	n.a.
21		5.243	0.149	1.224	0.04	0.05	n.a.

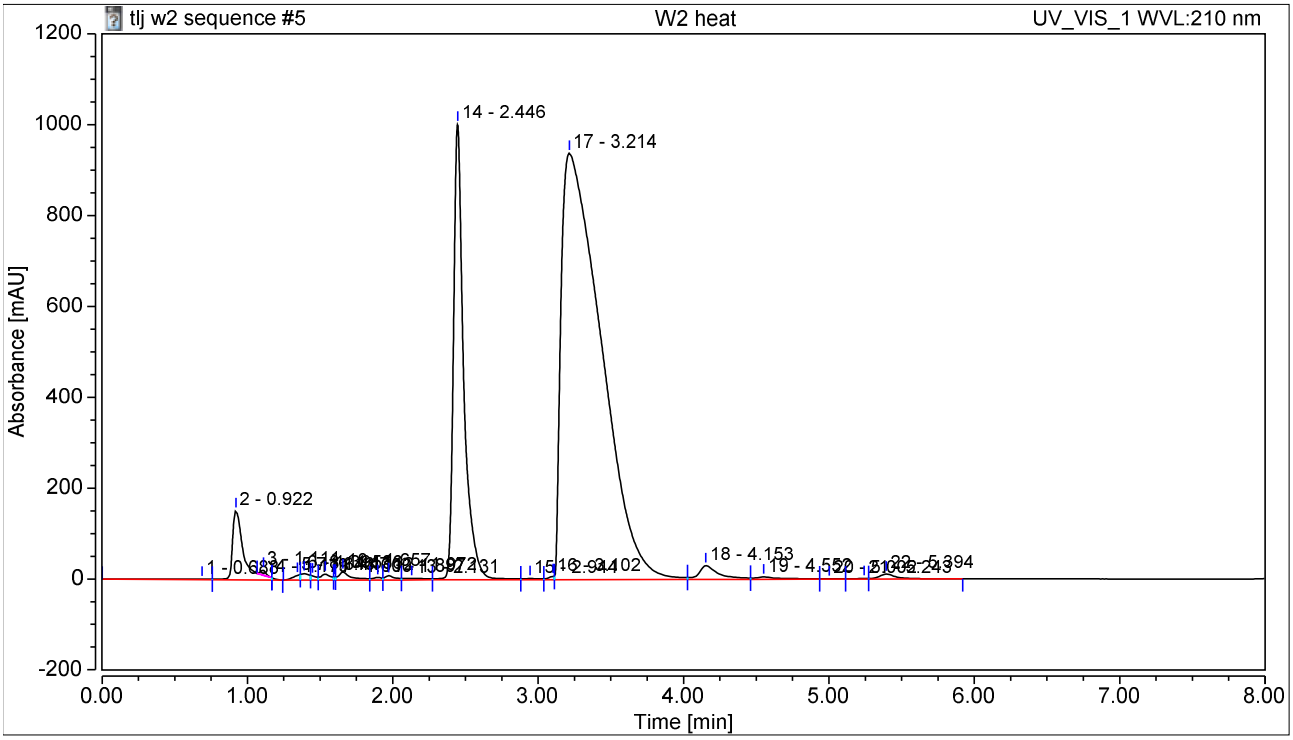
22		5.394	1.559	11.059	0.38	0.49	n.a.
Total:			**408.582**	**2261.883**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**W2 heat**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Oct/23 16:23**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

Number of executed test cases: **n.a.** **Total Result:** **Passed**

Summary

Sequence Details

Name:	**tlj w2 sequence**	*Created On:*	**25/Oct/23 15:29:15**
Directory:	**Instrument Data\HPLC\Sequences\CH376K\tlj**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Oct/23 16:31:23**
No. of Injections:	**5**	*Updated By:*	**student**

By Component **n.a.**

No.	Injection Name	Ret.Time min [0.67..0.71] UV_VIS_1	Area mAU*min [0.67..0.71] UV_VIS_1	Height mAU [0.67..0.71] UV_VIS_1	Amount n.a. [0.67..0.71] UV_VIS_1	Rel.Area % [0.67..0.71] UV_VIS_1	Peak Type [0.67..0.71] UV_VIS_1
1	W2 ignore	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	W2 light	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	W2 dark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	W2 darkcool	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	W2 heat	0.688	0.572	1.420	n.a.	0.14	BM

Sequence Overview

Sequence Details

Name:	**tlj w3 sequence**	*Created On:*	**01/Nov/23 13:51:17**
Directory:	**Instrument Data\HPLC\Sequences\CH376K**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**01/Nov/23 14:47:40**
No. of Injections:	**4**	*Updated By:*	**student**

Injection Details

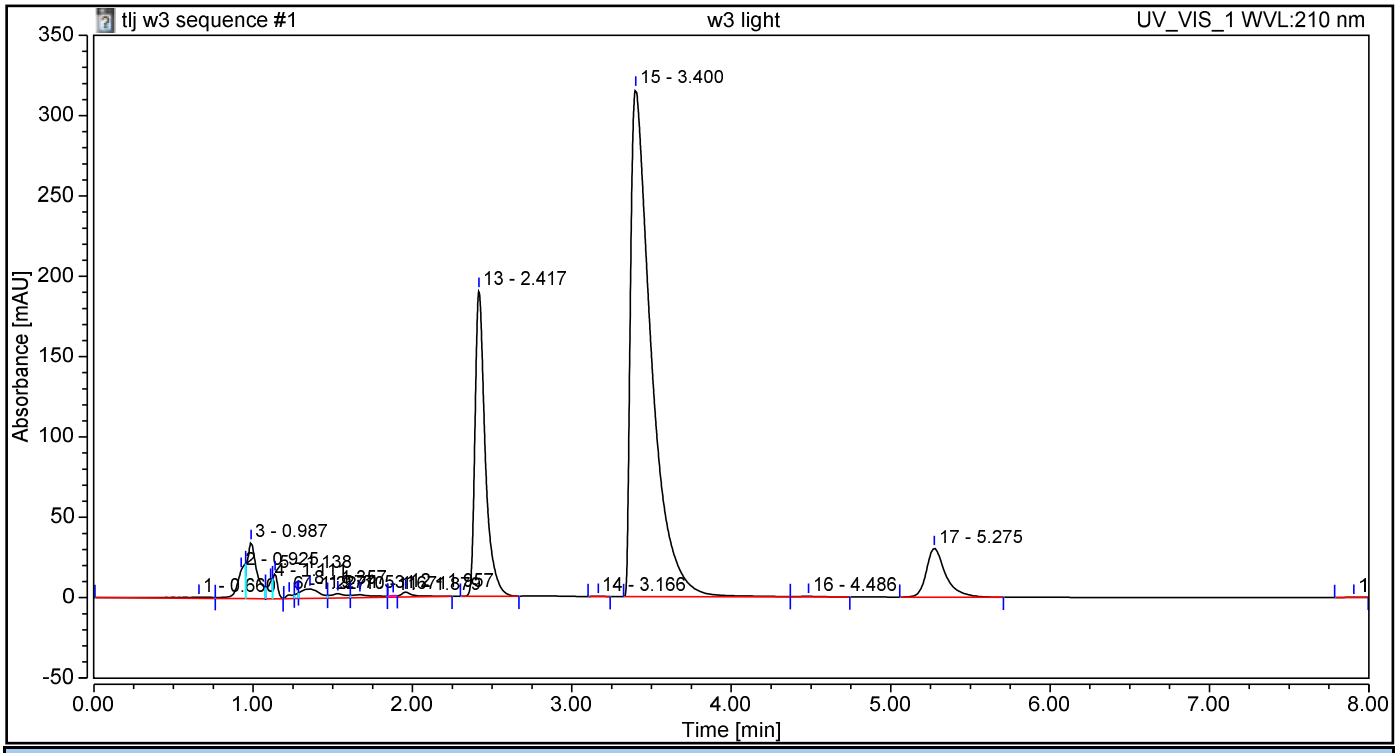
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	w3 light	0	Unknown		01/Nov/23 14:08:49	Finished
2	w3 dark	1	Unknown		01/Nov/23 14:17:00	Finished
3	w3 darkcool	2	Unknown		01/Nov/23 14:26:38	Finished
4	w3 heat	3	Unknown		01/Nov/23 14:39:37	Finished

Chromatogram and Results

Injection Details

Injection Name:	**w3 light**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**235.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

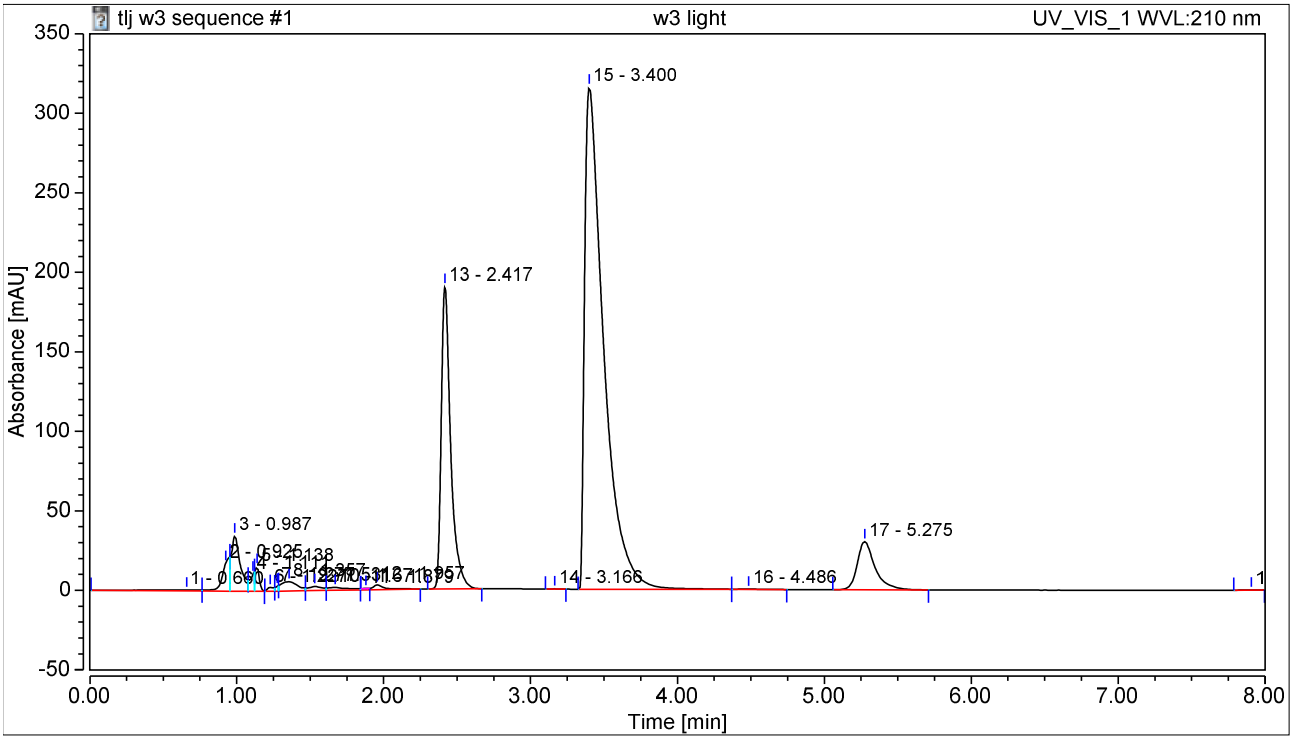
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.660	0.266	0.677	0.37	0.11	n.a.
2		0.925	1.129	17.460	1.55	2.74	n.a.
3		0.987	2.469	34.835	3.40	5.48	n.a.
4		1.111	0.399	10.827	0.55	1.70	n.a.
5		1.138	0.509	15.708	0.70	2.47	n.a.
6		1.227	0.120	2.407	0.16	0.38	n.a.
7		1.277	0.079	3.146	0.11	0.49	n.a.
8		1.357	0.762	5.863	1.05	0.92	n.a.
9		1.531	0.289	2.716	0.40	0.43	n.a.
10		1.671	0.289	1.832	0.40	0.29	n.a.
11		1.879	0.005	0.170	0.01	0.03	n.a.
12		1.957	0.334	3.067	0.46	0.48	n.a.
13		2.417	14.161	190.438	19.48	29.94	n.a.
14		3.166	0.014	0.205	0.02	0.03	n.a.
15		3.400	47.534	315.930	65.39	49.66	n.a.
16		4.486	0.057	0.352	0.08	0.06	n.a.
17		5.275	4.262	30.340	5.86	4.77	n.a.
18		7.907	0.020	0.170	0.03	0.03	n.a.
Total:			**72.697**	**636.145**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w3 light**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**235.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

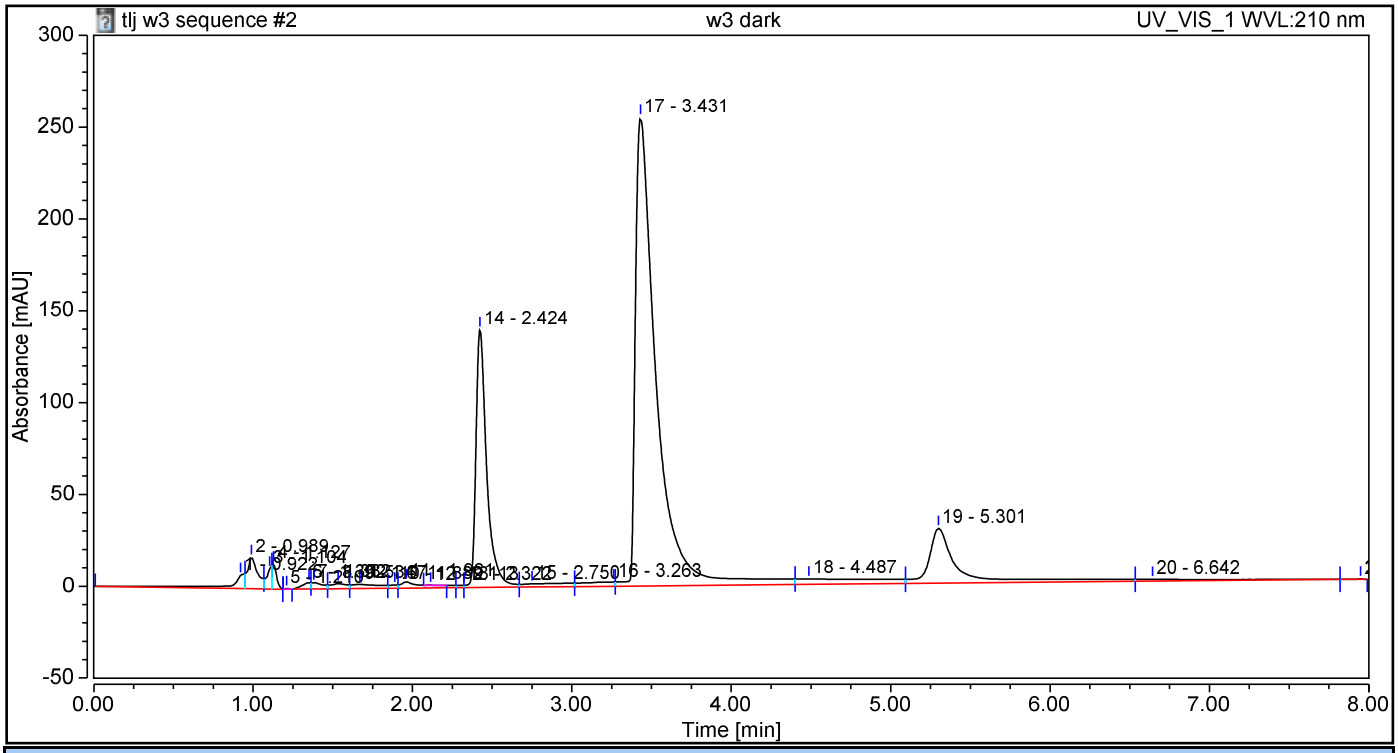
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w3 dark**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.922	0.934	7.080	1.44	1.41	n.a.
2		0.989	1.234	17.077	1.90	3.41	n.a.
3		1.104	0.439	10.943	0.67	2.18	n.a.
4		1.127	0.424	13.720	0.65	2.74	n.a.
5		1.210	0.012	0.383	0.02	0.08	n.a.
6		1.352	0.222	3.340	0.34	0.67	n.a.
7		1.382	0.280	3.399	0.43	0.68	n.a.
8		1.534	0.319	2.774	0.49	0.55	n.a.
9		1.671	0.450	2.254	0.69	0.45	n.a.
10		1.889	0.110	1.781	0.17	0.36	n.a.
11		1.961	0.634	3.402	0.98	0.68	n.a.
12		2.113	0.004	0.076	0.01	0.02	n.a.
13		2.322	0.063	1.286	0.10	0.26	n.a.
14		2.424	11.014	140.364	16.94	28.01	n.a.
15		2.750	0.610	1.706	0.94	0.34	n.a.
16		3.263	0.538	2.307	0.83	0.46	n.a.
17		3.431	38.831	255.179	59.73	50.93	n.a.
18		4.487	1.809	3.030	2.78	0.60	n.a.
19		5.301	6.390	29.843	9.83	5.96	n.a.
20		6.642	0.685	1.052	1.05	0.21	n.a.
21		7.947	0.009	0.086	0.01	0.02	n.a.

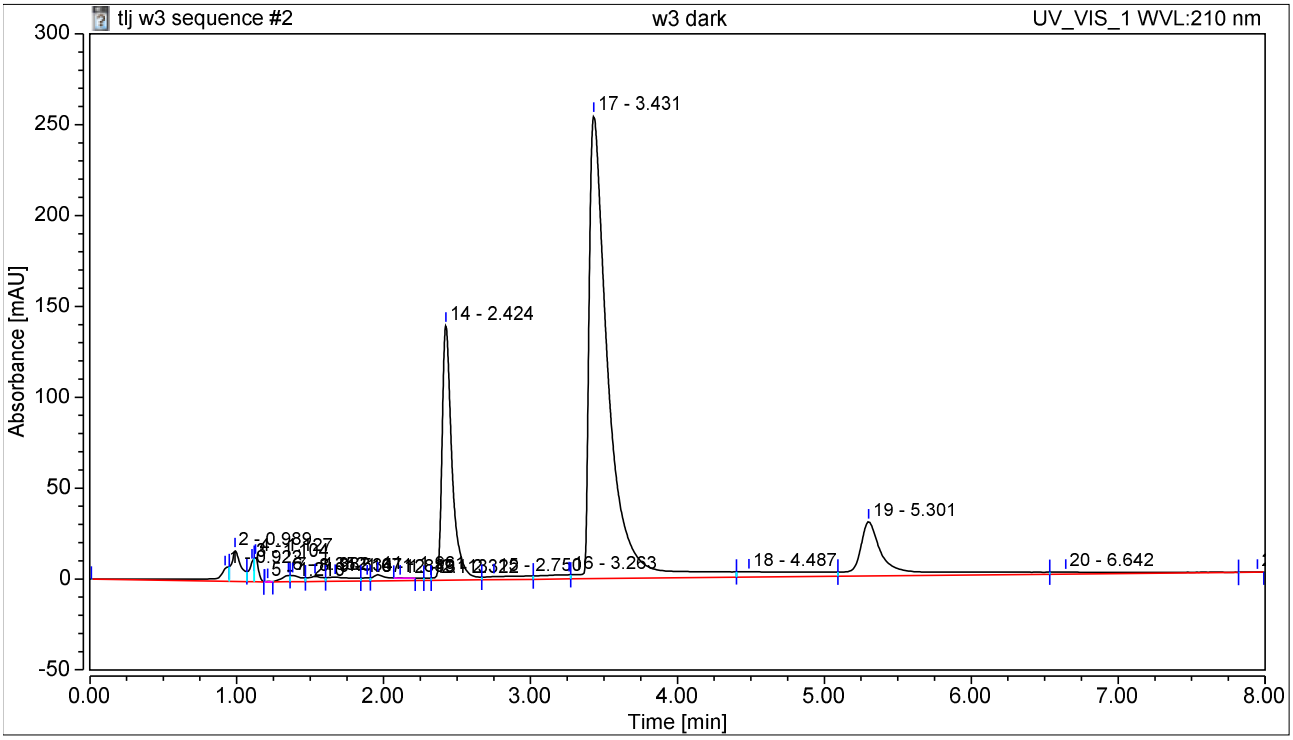
Total:	**65.010**	**501.082**	**100.00**	**100.00**

Chromatogram and SST Results

Injection Details

Injection Name:	**w3 dark**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:17**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

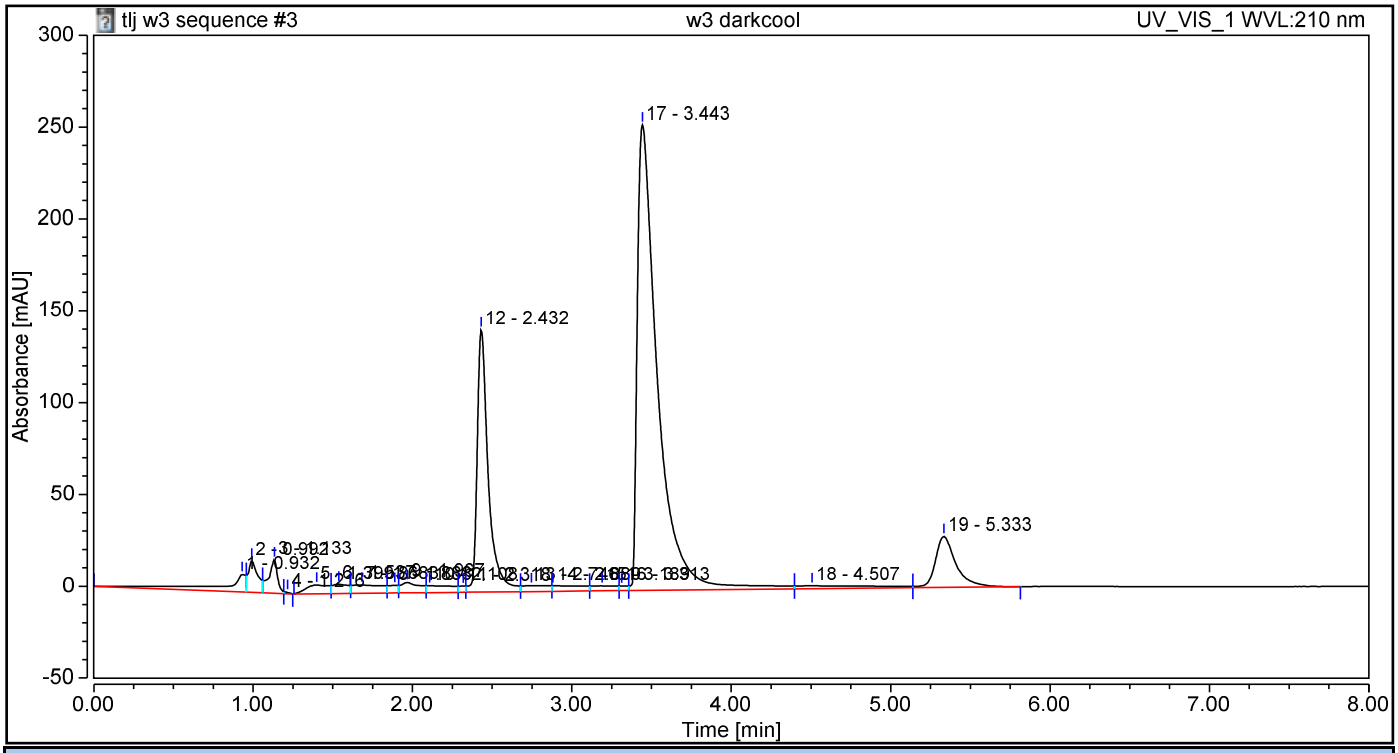
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w3 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

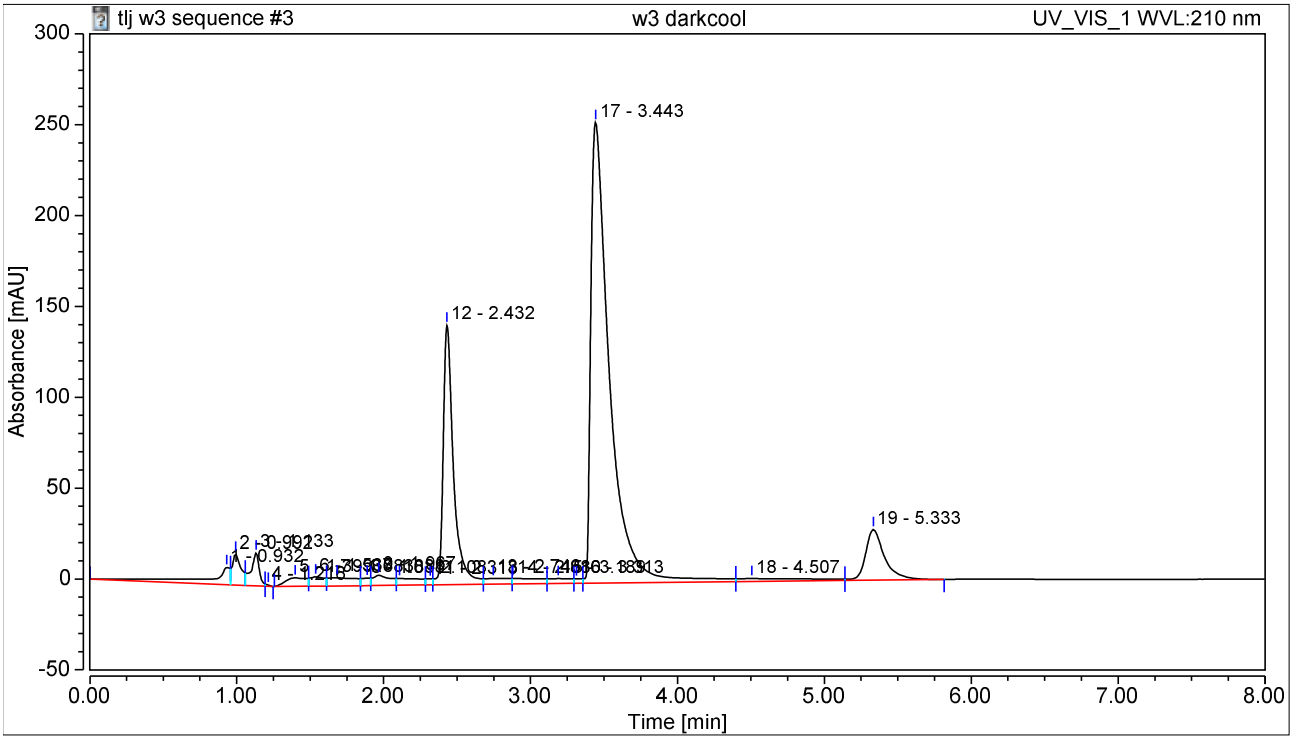
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.932	1.857	9.498	2.88	1.85	n.a.
2		0.992	1.167	17.098	1.81	3.33	n.a.
3		1.133	1.171	18.200	1.82	3.54	n.a.
4		1.216	0.032	0.744	0.05	0.14	n.a.
5		1.399	0.765	4.763	1.19	0.93	n.a.
6		1.537	0.573	5.107	0.89	0.99	n.a.
7		1.683	0.971	4.552	1.51	0.89	n.a.
8		1.888	0.287	4.101	0.44	0.80	n.a.
9		1.967	0.771	5.666	1.20	1.10	n.a.
10		2.108	0.697	3.699	1.08	0.72	n.a.
11		2.318	0.163	3.324	0.25	0.65	n.a.
12		2.432	11.618	142.938	18.03	27.81	n.a.
13		2.746	0.607	3.180	0.94	0.62	n.a.
14		2.880	0.671	3.015	1.04	0.59	n.a.
15		3.189	0.483	2.721	0.75	0.53	n.a.
16		3.313	0.152	2.503	0.24	0.49	n.a.
17		3.443	37.414	253.452	58.07	49.31	n.a.
18		4.507	0.886	1.616	1.38	0.31	n.a.
19		5.333	4.149	27.787	6.44	5.41	n.a.
Total:			**64.435**	**513.964**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w3 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

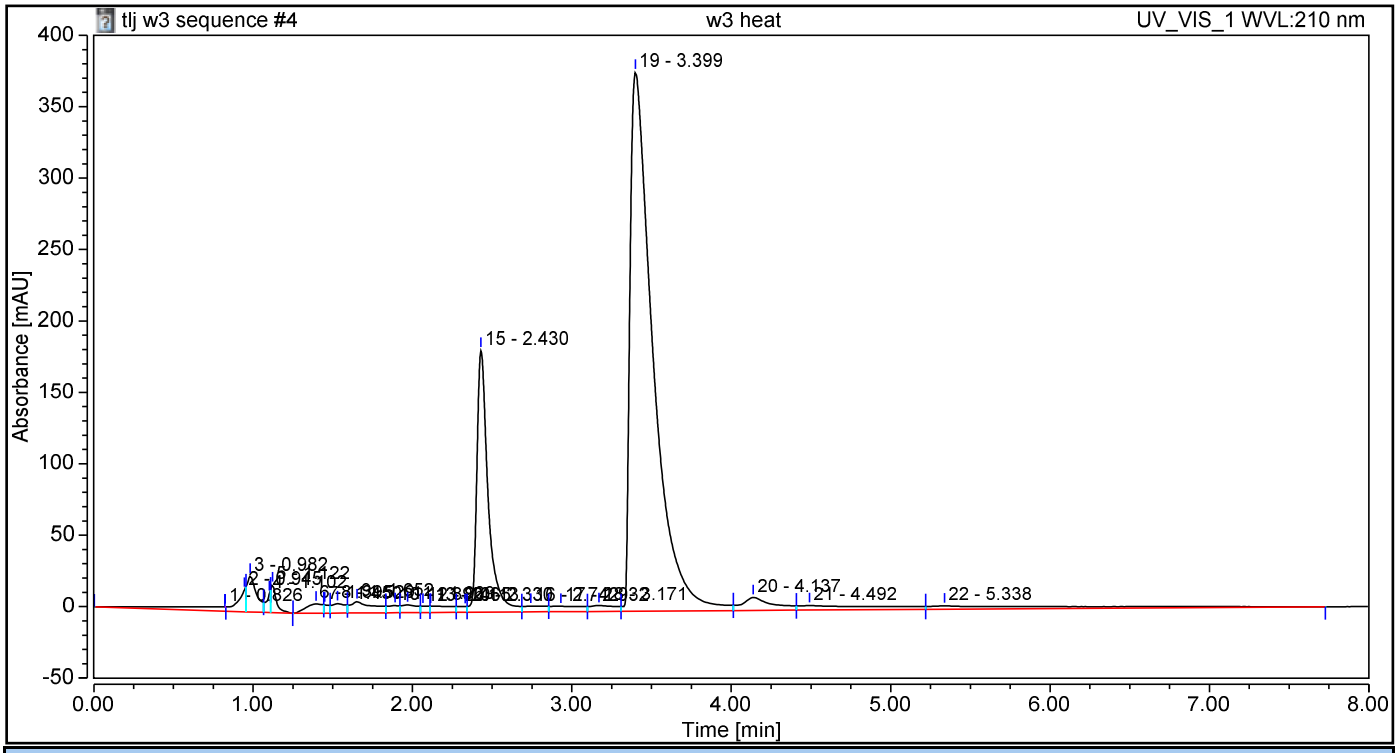
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w3 heat**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.826	0.000	0.010	0.00	0.00	n.a.
2		0.945	2.166	15.206	2.23	2.14	n.a.
3		0.982	1.725	25.126	1.78	3.54	n.a.
4		1.102	0.418	13.178	0.43	1.86	n.a.
5		1.122	0.773	19.570	0.80	2.75	n.a.
6		1.395	0.774	6.579	0.80	0.93	n.a.
7		1.450	0.234	5.826	0.24	0.82	n.a.
8		1.529	0.646	6.586	0.67	0.93	n.a.
9		1.652	1.351	7.899	1.39	1.11	n.a.
10		1.892	0.425	4.939	0.44	0.70	n.a.
11		1.969	0.627	5.428	0.65	0.76	n.a.
12		2.065	0.263	4.420	0.27	0.62	n.a.
13		2.113	0.691	4.371	0.71	0.62	n.a.
14		2.330	0.277	4.082	0.29	0.57	n.a.
15		2.430	15.136	183.393	15.61	25.81	n.a.
16		2.742	0.651	3.912	0.67	0.55	n.a.
17		2.932	0.880	3.740	0.91	0.53	n.a.
18		3.171	0.772	4.166	0.80	0.59	n.a.
19		3.399	62.735	377.396	64.70	53.12	n.a.
20		4.137	2.007	9.081	2.07	1.28	n.a.
21		4.492	1.937	3.164	2.00	0.45	n.a.

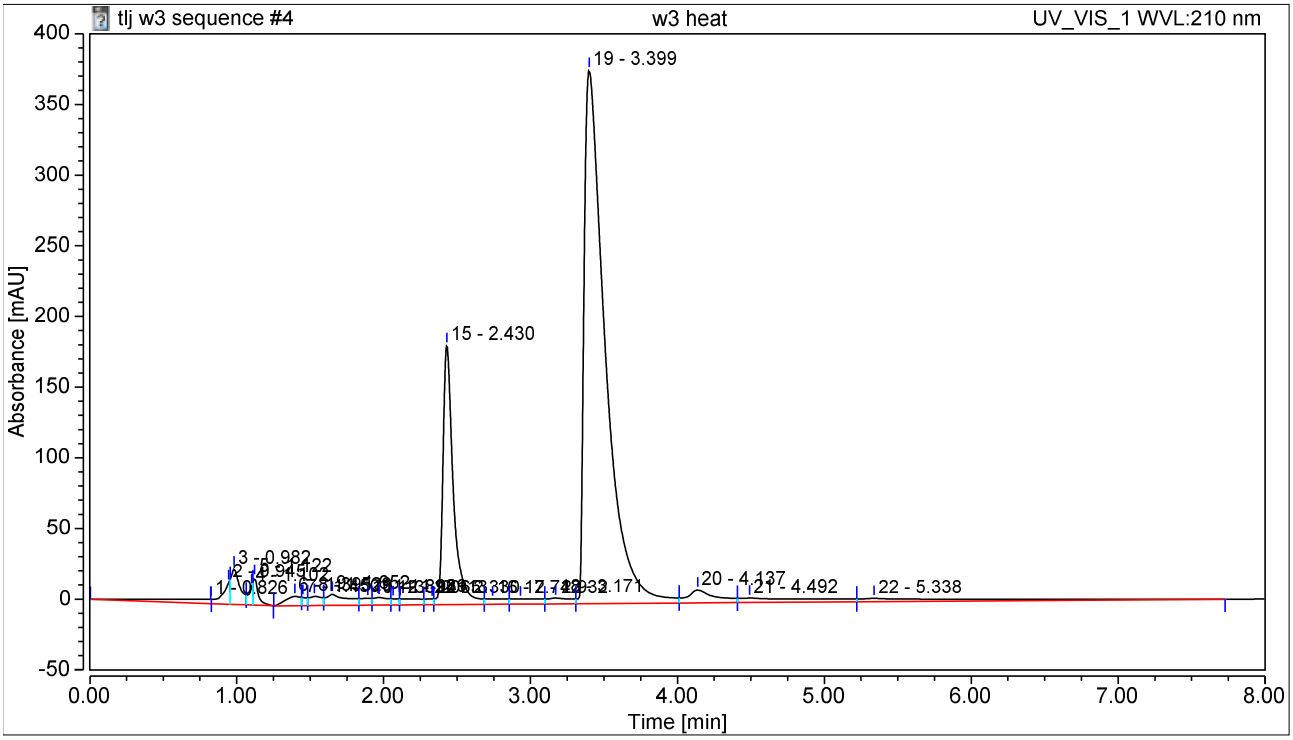
22		5.338	2.474	2.341	2.55	0.33	n.a.
Total:			**96.962**	**710.415**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w3 heat**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

Number of executed test cases: **n.a.** **Total Result:** **Passed**

Summary

Sequence Details

Name:	**tlj w3 sequence**	*Created On:*	**01/Nov/23 13:51:17**
Directory:	**Instrument Data\HPLC\Sequences\CH376K\tlj**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**01/Nov/23 14:47:40**
No. of Injections:	**4**	*Updated By:*	**student**

By Component **n.a.**

No.	Injection Name	Ret.Time min [0.81..0.85] UV_VIS_1	Area mAU*min [0.81..0.85] UV_VIS_1	Height mAU [0.81..0.85] UV_VIS_1	Amount n.a. [0.81..0.85] UV_VIS_1	Rel.Area % [0.81..0.85] UV_VIS_1	Peak Type [0.81..0.85] UV_VIS_1
1	w3 light	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	w3 dark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	w3 darkcool	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	w3 heat	0.826	0.000	0.010	n.a.	0.00	Ru

Sequence Overview

Sequence Details

Name:	**tlj w4 sequence**	*Created On:*	**08/Nov/23 15:09:24**
Directory:	**Instrument Data\HPLC\Sequences\CH376K**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**08/Nov/23 15:55:03**
No. of Injections:	**4**	*Updated By:*	**student**

Injection Details

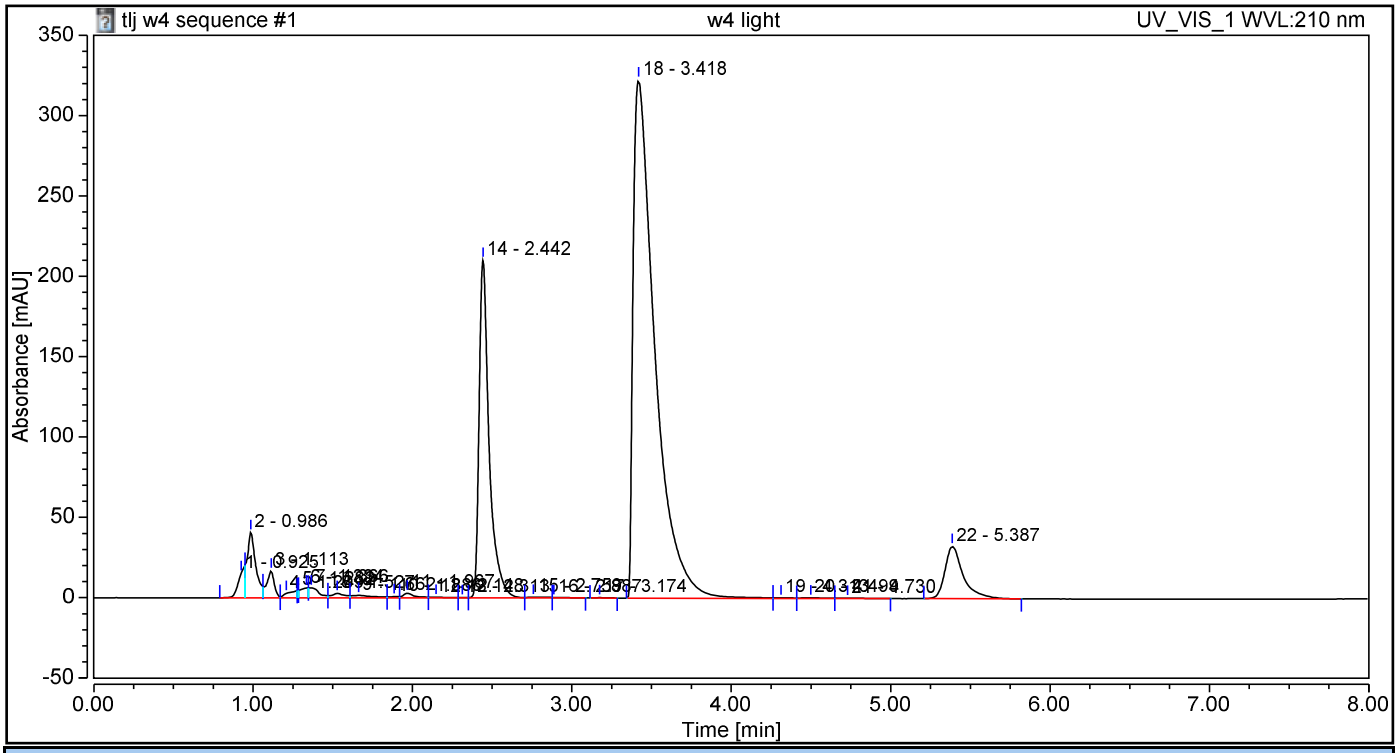
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	w4 light	0	Unknown		08/Nov/23 15:19:14	Finished
2	w4 dark	1	Unknown		08/Nov/23 15:28:06	Finished
3	w4 darkcool	2	Unknown		08/Nov/23 15:37:52	Finished
4	w4 heat	3	Unknown		08/Nov/23 15:47:02	Finished

Chromatogram and Results

Injection Details

Injection Name:	**w4 light**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**235.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Nov/23 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.925	0.825	15.053	1.07	2.25	n.a.
2		0.986	2.566	40.607	3.33	6.08	n.a.
3		1.113	0.915	16.738	1.19	2.51	n.a.
4		1.209	0.300	2.725	0.39	0.41	n.a.
5		1.282	0.042	4.636	0.05	0.69	n.a.
6		1.334	0.342	6.121	0.44	0.92	n.a.
7		1.366	0.456	6.248	0.59	0.94	n.a.
8		1.527	0.253	2.711	0.33	0.41	n.a.
9		1.662	0.241	1.556	0.31	0.23	n.a.
10		1.886	0.056	0.866	0.07	0.13	n.a.
11		1.967	0.234	2.945	0.30	0.44	n.a.
12		2.148	0.056	0.476	0.07	0.07	n.a.
13		2.313	0.009	0.175	0.01	0.03	n.a.
14		2.442	15.321	210.221	19.90	31.46	n.a.
15		2.759	0.066	0.438	0.09	0.07	n.a.
16		2.887	0.034	0.324	0.04	0.05	n.a.
17		3.174	0.017	0.215	0.02	0.03	n.a.
18		3.418	50.766	322.508	65.95	48.27	n.a.
19		4.313	0.048	0.384	0.06	0.06	n.a.
20		4.499	0.068	0.463	0.09	0.07	n.a.
21		4.730	0.042	0.243	0.05	0.04	n.a.

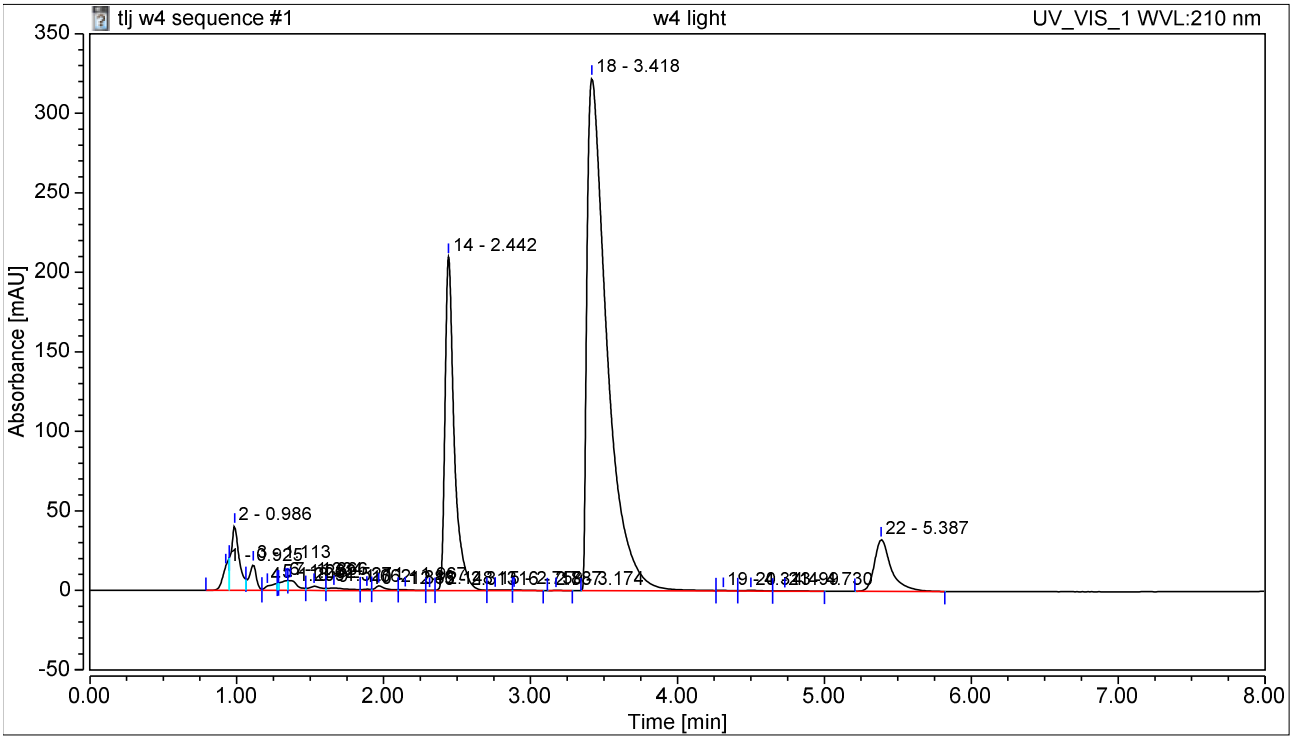
22		5.387	4.324	32.499	5.62	4.86	n.a.
Total:			**76.980**	**668.152**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w4 light**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**235.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Nov/23 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

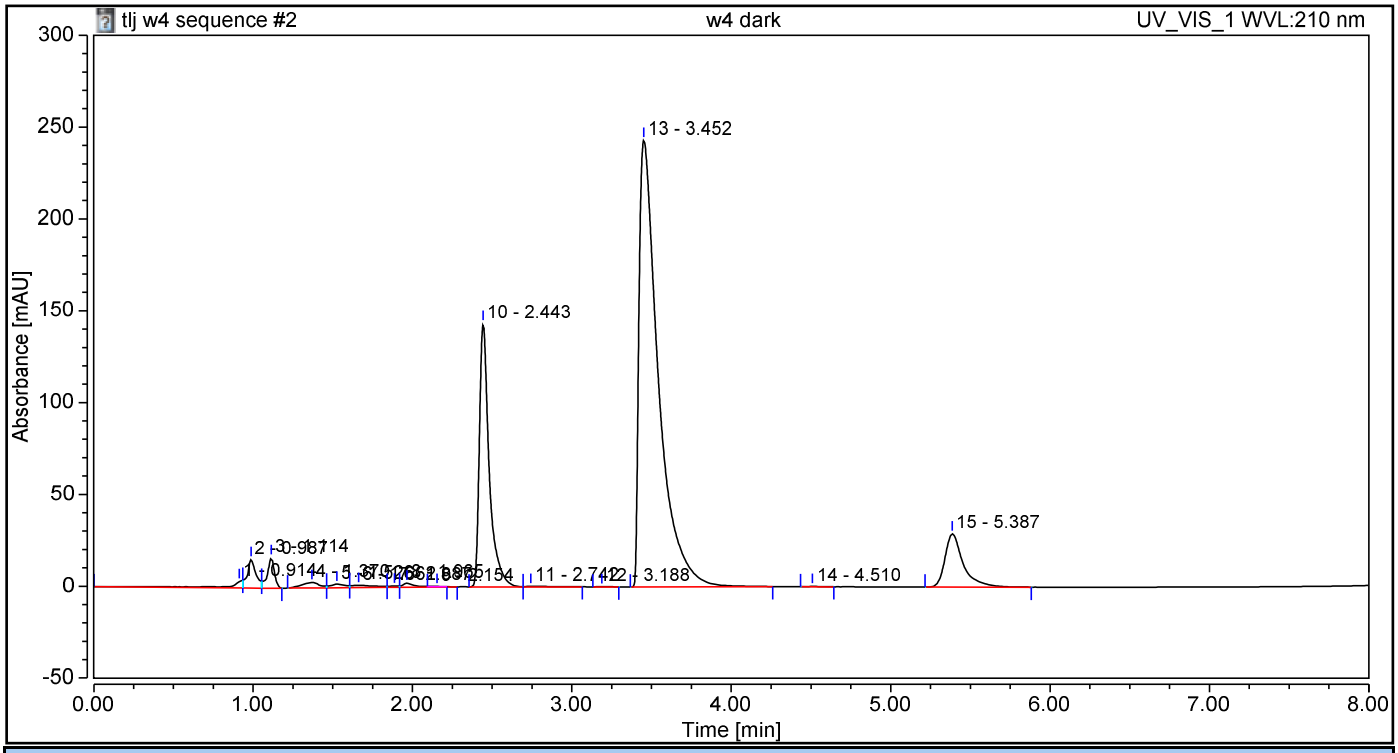
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w4 dark**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Nov/23 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

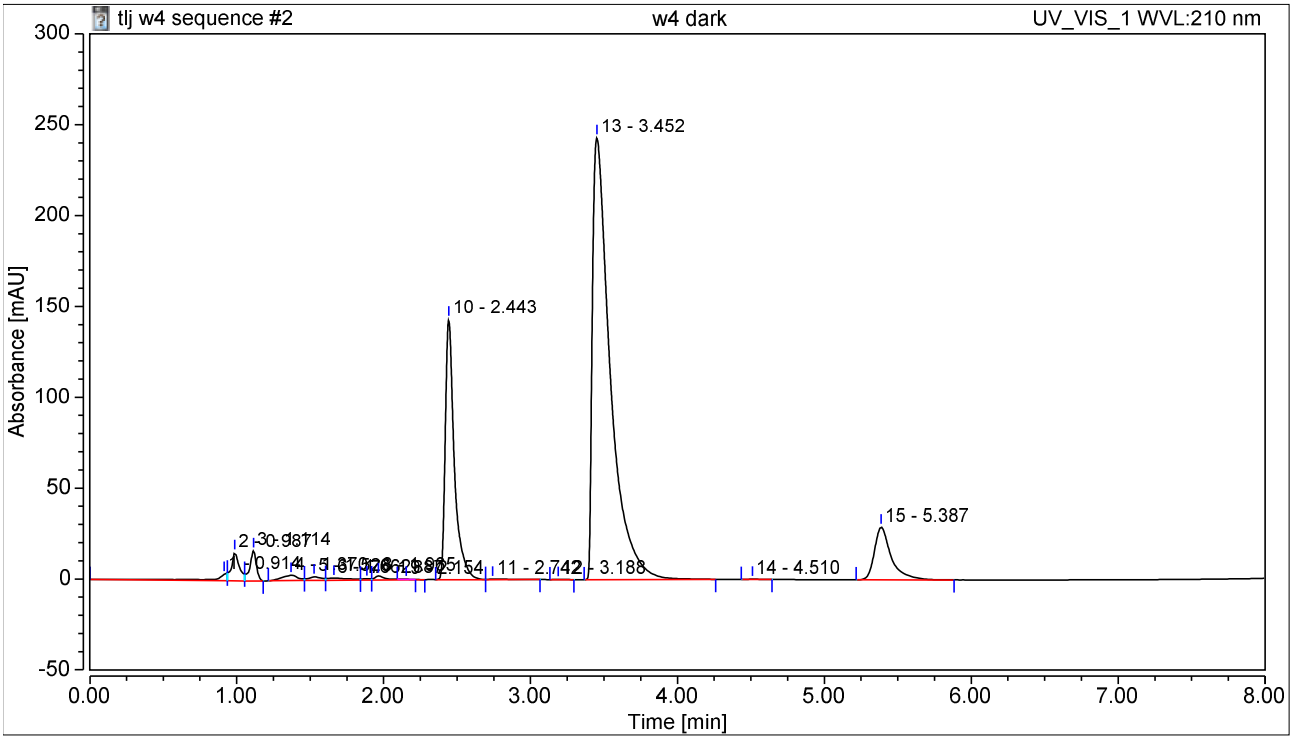
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.914	0.431	3.467	0.84	0.75	n.a.
2		0.987	0.964	15.489	1.87	3.36	n.a.
3		1.114	0.855	16.634	1.66	3.61	n.a.
4		1.370	0.372	2.893	0.72	0.63	n.a.
5		1.526	0.203	2.035	0.39	0.44	n.a.
6		1.662	0.213	1.239	0.41	0.27	n.a.
7		1.887	0.051	0.779	0.10	0.17	n.a.
8		1.965	0.205	2.207	0.40	0.48	n.a.
9		2.154	0.007	0.102	0.01	0.02	n.a.
10		2.443	10.242	143.473	19.84	31.10	n.a.
11		2.742	0.055	0.294	0.11	0.06	n.a.
12		3.188	0.012	0.157	0.02	0.03	n.a.
13		3.452	34.164	243.281	66.17	52.74	n.a.
14		4.510	0.018	0.193	0.03	0.04	n.a.
15		5.387	3.836	29.035	7.43	6.29	n.a.
Total:			**51.627**	**461.276**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w4 dark**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Nov/23 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

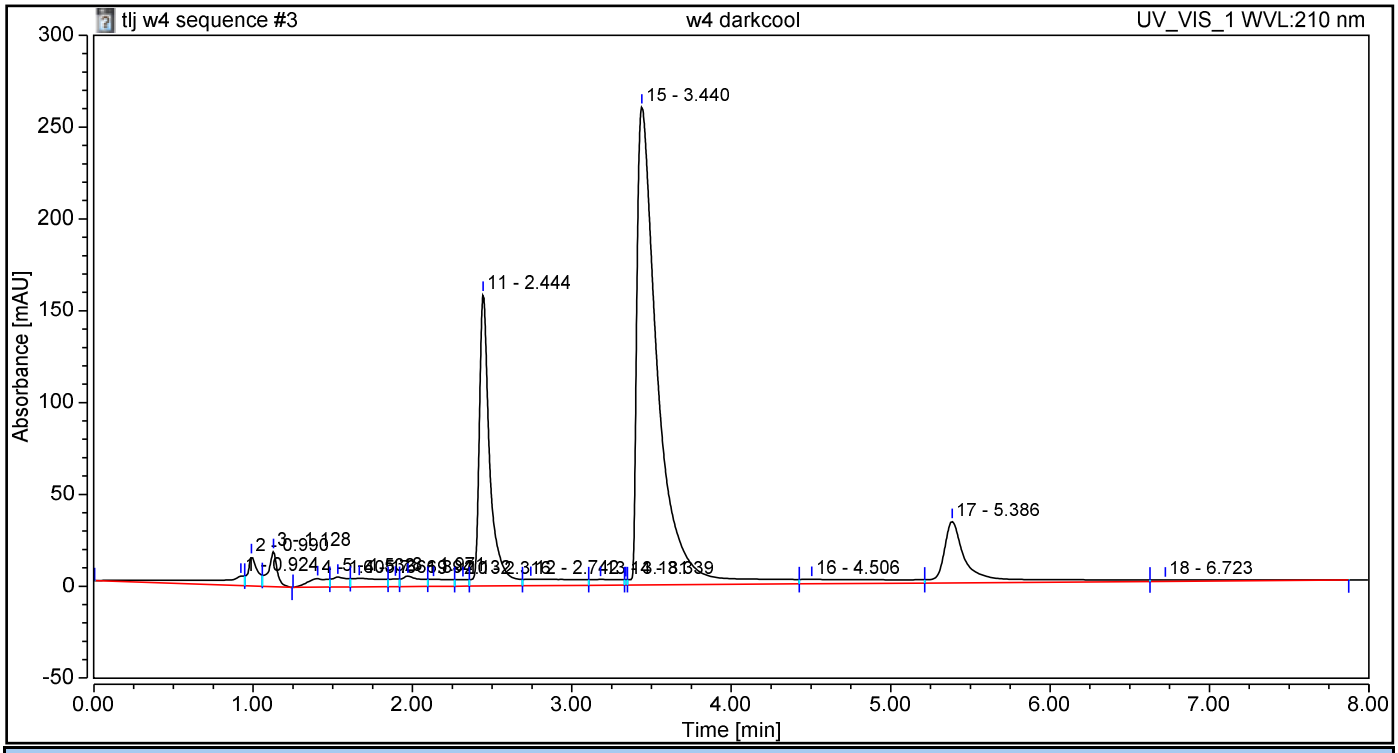
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w4 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Nov/23 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

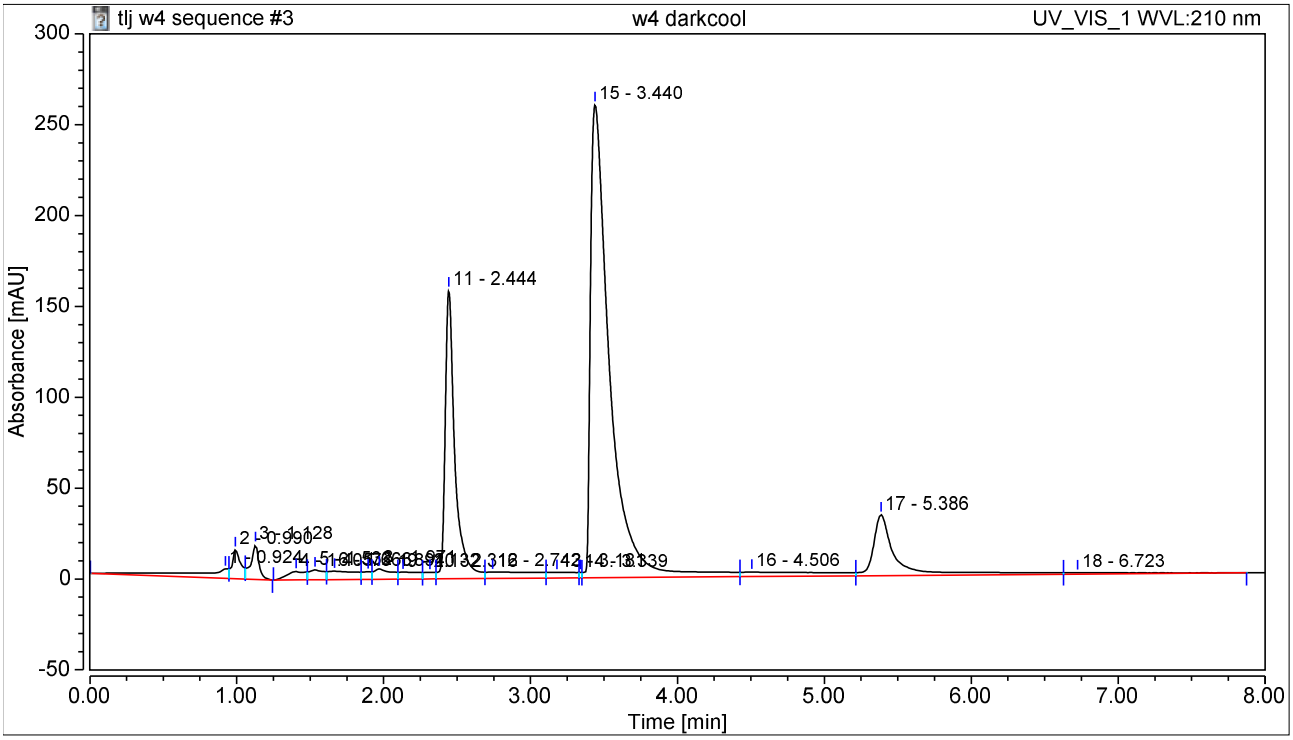
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.924	1.598	5.265	2.27	0.98	n.a.
2		0.990	1.067	15.931	1.51	2.96	n.a.
3		1.128	1.219	19.221	1.73	3.57	n.a.
4		1.405	0.678	4.657	0.96	0.86	n.a.
5		1.532	0.627	5.432	0.89	1.01	n.a.
6		1.666	1.018	4.651	1.45	0.86	n.a.
7		1.894	0.301	4.221	0.43	0.78	n.a.
8		1.971	0.800	5.789	1.14	1.08	n.a.
9		2.132	0.626	3.850	0.89	0.72	n.a.
10		2.316	0.328	3.617	0.47	0.67	n.a.
11		2.444	12.256	158.968	17.40	29.53	n.a.
12		2.742	1.382	3.594	1.96	0.67	n.a.
13		3.181	0.683	3.176	0.97	0.59	n.a.
14		3.339	0.053	2.920	0.08	0.54	n.a.
15		3.440	39.580	260.372	56.20	48.36	n.a.
16		4.506	1.621	2.484	2.30	0.46	n.a.
17		5.386	6.102	33.409	8.66	6.21	n.a.
18		6.723	0.487	0.822	0.69	0.15	n.a.
Total:			**70.426**	**538.378**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w4 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Nov/23 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

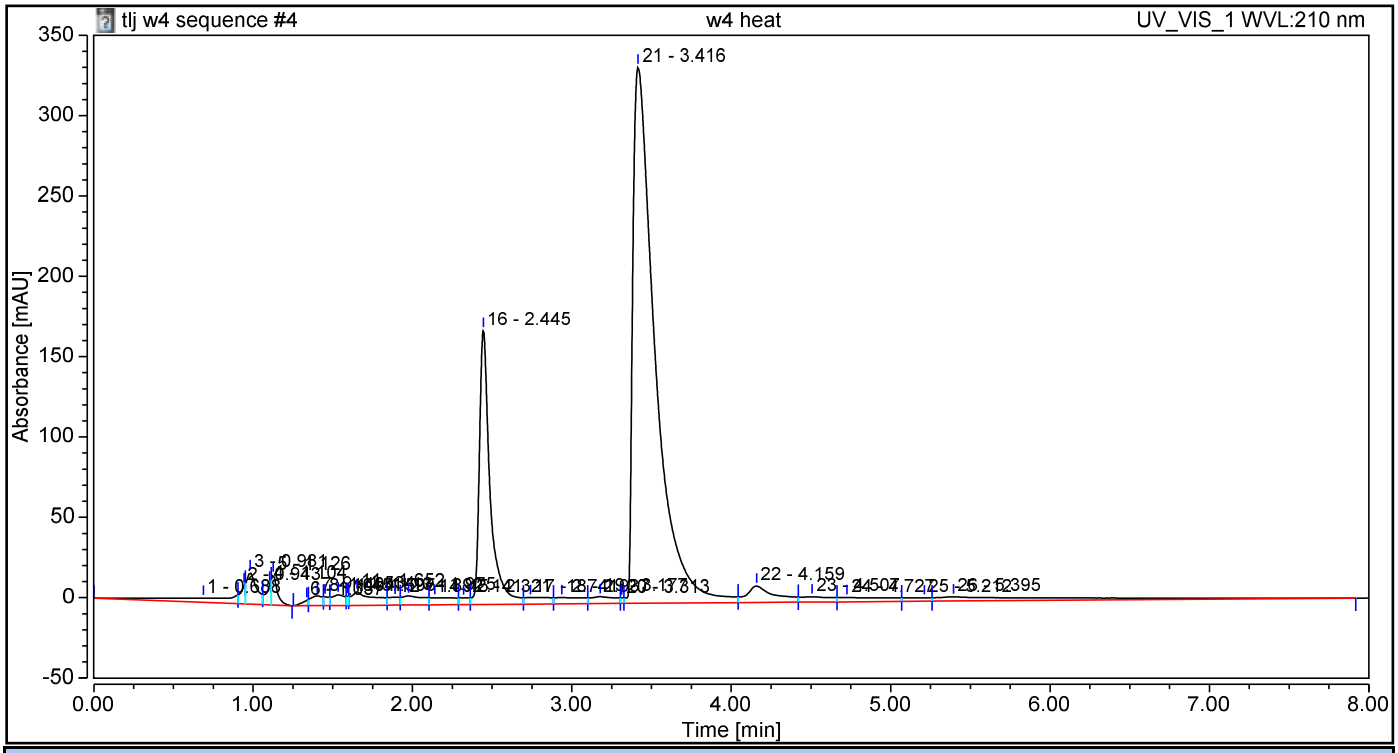
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w4 heat**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Nov/23 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.688	1.596	2.649	1.84	0.40	n.a.
2		0.943	0.396	11.298	0.46	1.71	n.a.
3		0.981	1.388	19.574	1.60	2.96	n.a.
4		1.104	0.473	12.989	0.55	1.97	n.a.
5		1.126	0.785	18.762	0.91	2.84	n.a.
6		1.337	0.154	3.379	0.18	0.51	n.a.
7		1.404	0.509	5.984	0.59	0.91	n.a.
8		1.451	0.215	5.405	0.25	0.82	n.a.
9		1.534	0.593	6.595	0.69	1.00	n.a.
10		1.595	0.093	5.612	0.11	0.85	n.a.
11		1.652	1.367	8.346	1.58	1.26	n.a.
12		1.892	0.400	4.953	0.46	0.75	n.a.
13		1.975	0.886	5.678	1.02	0.86	n.a.
14		2.141	0.783	4.418	0.90	0.67	n.a.
15		2.321	0.307	4.201	0.35	0.64	n.a.
16		2.445	13.337	170.523	15.41	25.80	n.a.
17		2.741	0.750	4.107	0.87	0.62	n.a.
18		2.937	0.800	3.869	0.92	0.59	n.a.
19		3.177	0.781	4.329	0.90	0.65	n.a.
20		3.313	0.077	3.439	0.09	0.52	n.a.
21		3.416	53.829	333.760	62.19	50.50	n.a.

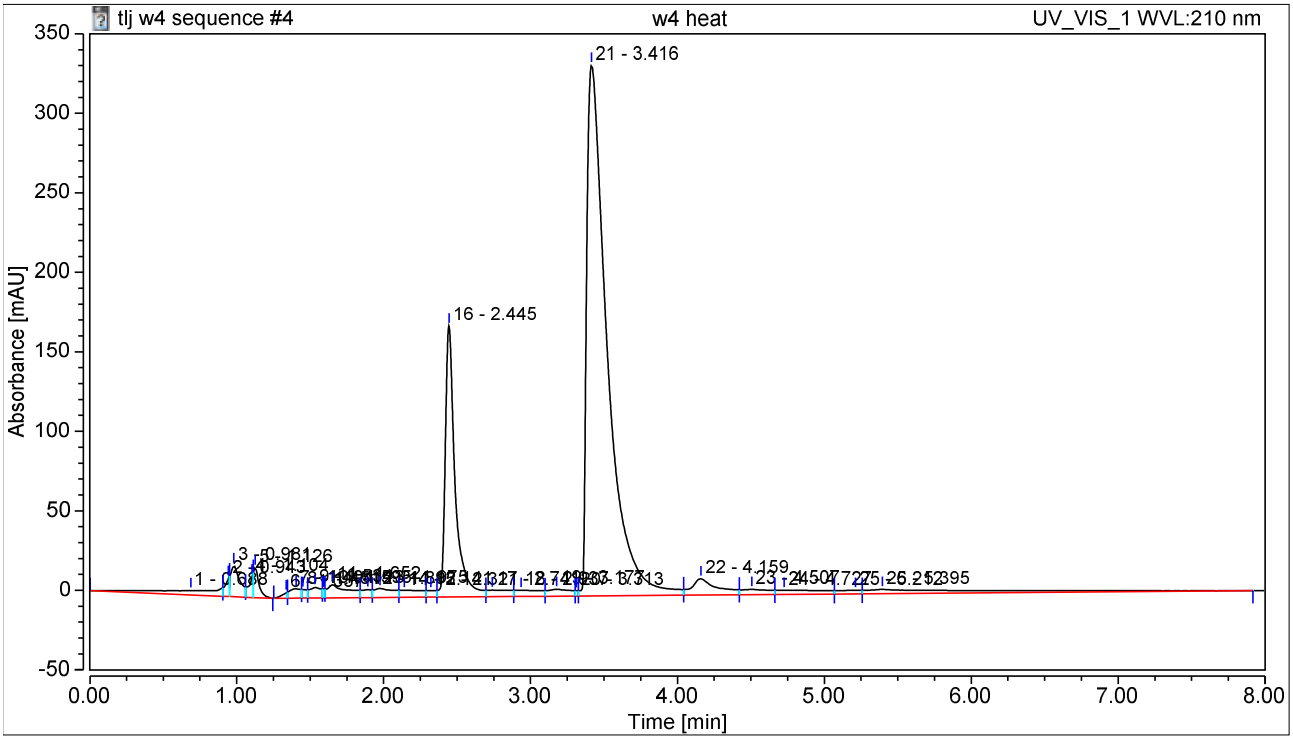
22		4.159	2.060	10.302	2.38	1.56	n.a.
23		4.507	0.723	3.315	0.84	0.50	n.a.
24		4.727	0.969	2.608	1.12	0.39	n.a.
25		5.212	0.417	2.217	0.48	0.34	n.a.
26		5.395	2.870	2.643	3.32	0.40	n.a.
Total:			**86.556**	**660.955**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w4 heat**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Nov/23 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

Number of executed test cases: **n.a.** **Total Result:** **Passed**

Summary

Sequence Details

Name:	**tlj w4 sequence**	*Created On:*	**08/Nov/23 15:09:24**
Directory:	**Instrument Data\HPLC\Sequences\CH376K\tlj**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**08/Nov/23 15:55:03**
No. of Injections:	**4**	*Updated By:*	**student**

By Component **n.a.**

No.	Injection Name	Ret.Time min [0.92..0.97] UV_VIS_1	Area mAU*min [0.92..0.97] UV_VIS_1	Height mAU [0.92..0.97] UV_VIS_1	Amount n.a. [0.92..0.97] UV_VIS_1	Rel.Area % [0.92..0.97] UV_VIS_1	Peak Type [0.92..0.97] UV_VIS_1
1	w4 light	0.925	0.825	15.053	n.a.	1.07	M
2	w4 dark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	w4 darkcool	0.924	1.598	5.265	n.a.	2.27	M
4	w4 heat	0.943	0.396	11.298	n.a.	0.46	M

Sequence Overview

Sequence Details

Name:	**tlj w5 sequence**	*Created On:*	**15/Nov/23 15:41:00**
Directory:	**Instrument Data\HPLC\Sequences\CH376K**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**15/Nov/23 16:36:11**
No. of Injections:	**5**	*Updated By:*	**student**

Injection Details

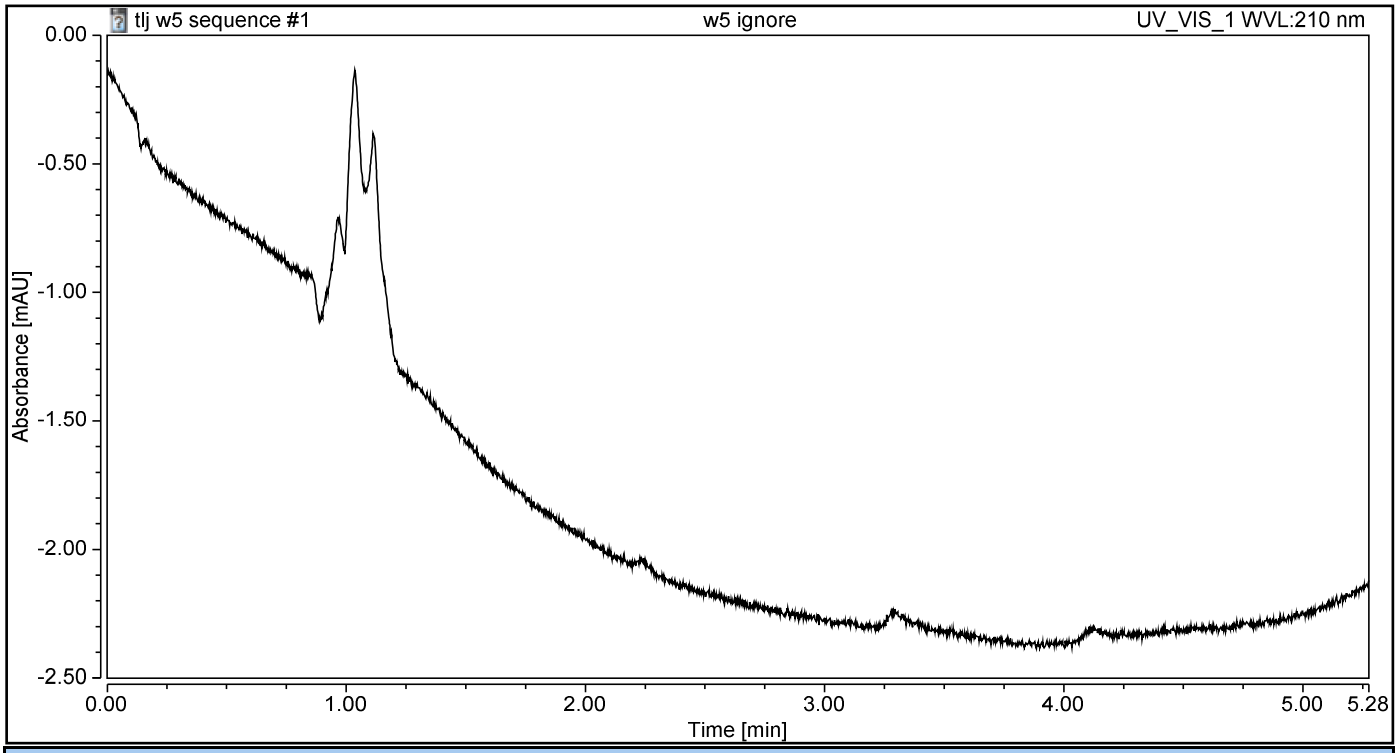
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	w5 ignore	0	Unknown		15/Nov/23 15:55:14	Interrupted
2	w5 dark	1	Unknown		15/Nov/23 16:02:06	Finished
3	w5 darkcool	2	Unknown		15/Nov/23 16:10:34	Finished
4	w5 heat	3	Unknown		15/Nov/23 16:18:42	Finished
5	w5 light	3	Unknown		15/Nov/23 16:27:01	Finished

Chromatogram and Results

Injection Details

Injection Name:	**w5 ignore**	*Run Time (min):*	**5.27**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**280.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

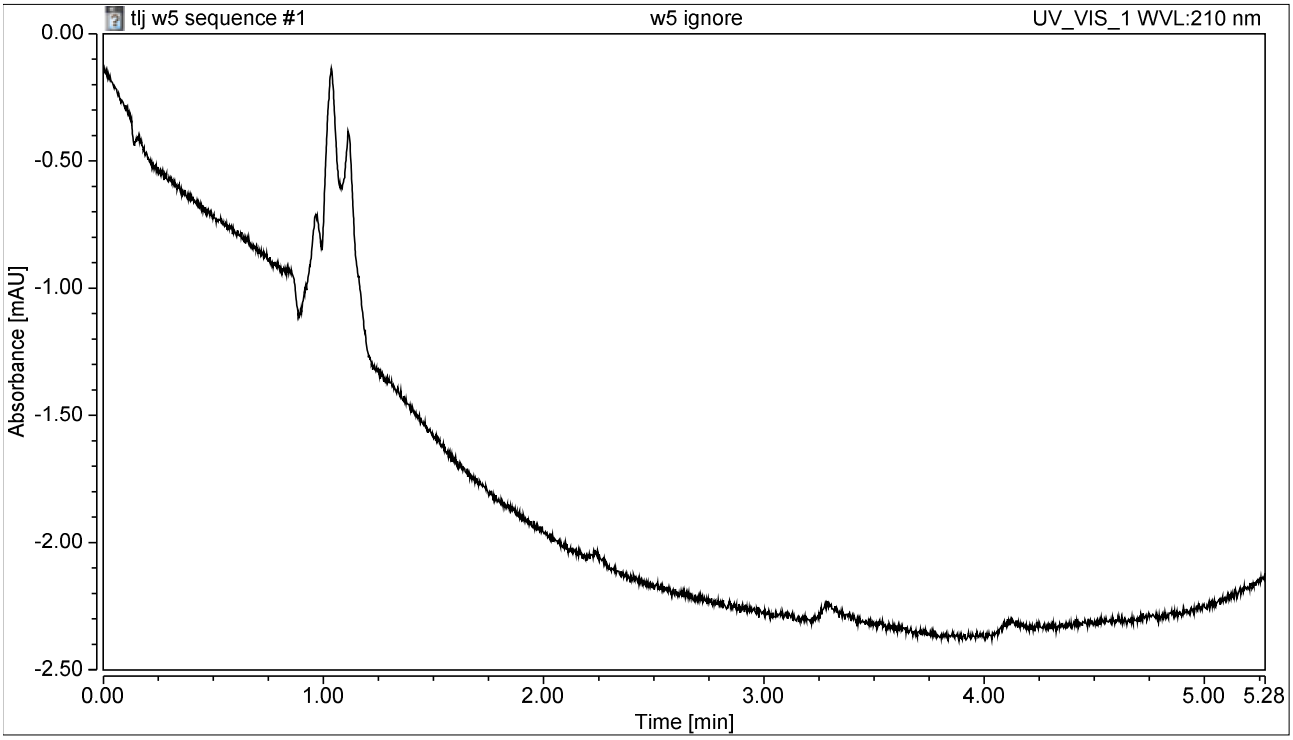
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w5 ignore**	*Run Time (min):*	**5.27**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**280.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

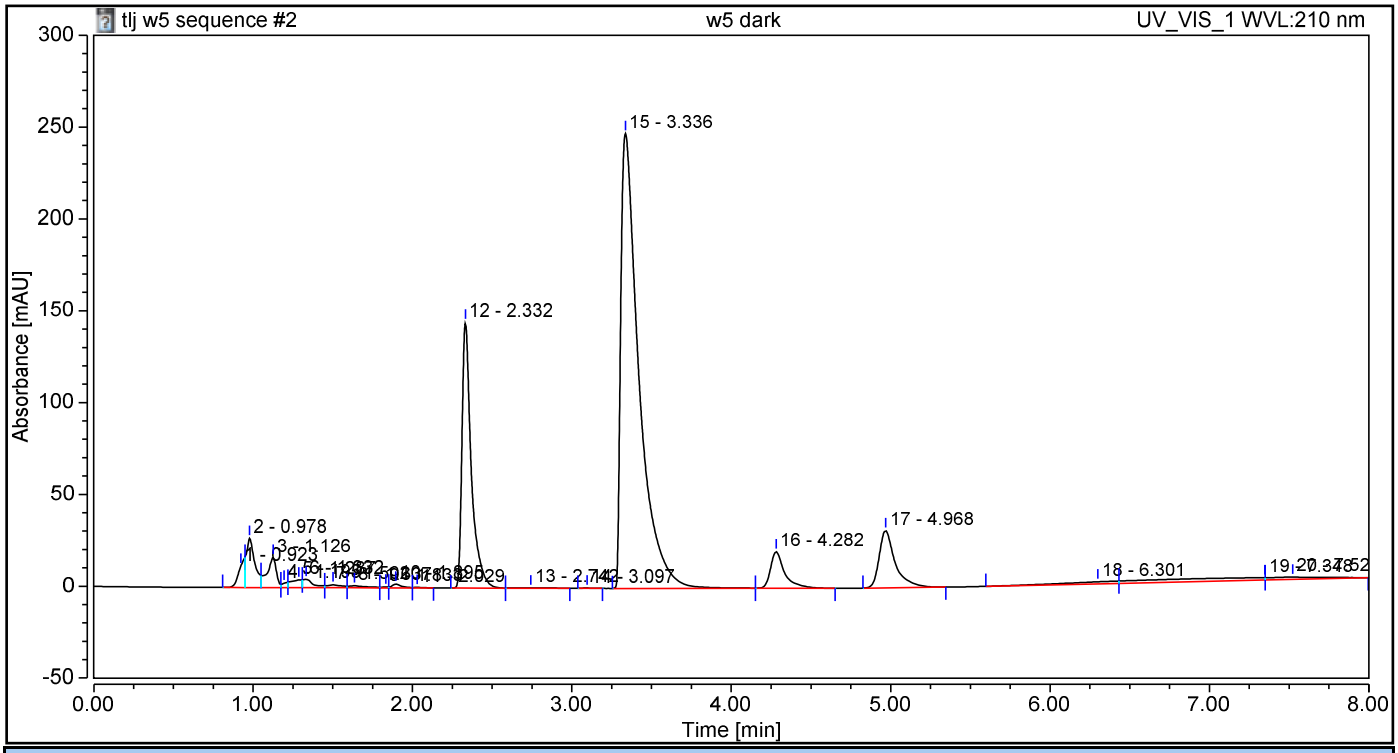
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w5 dark**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

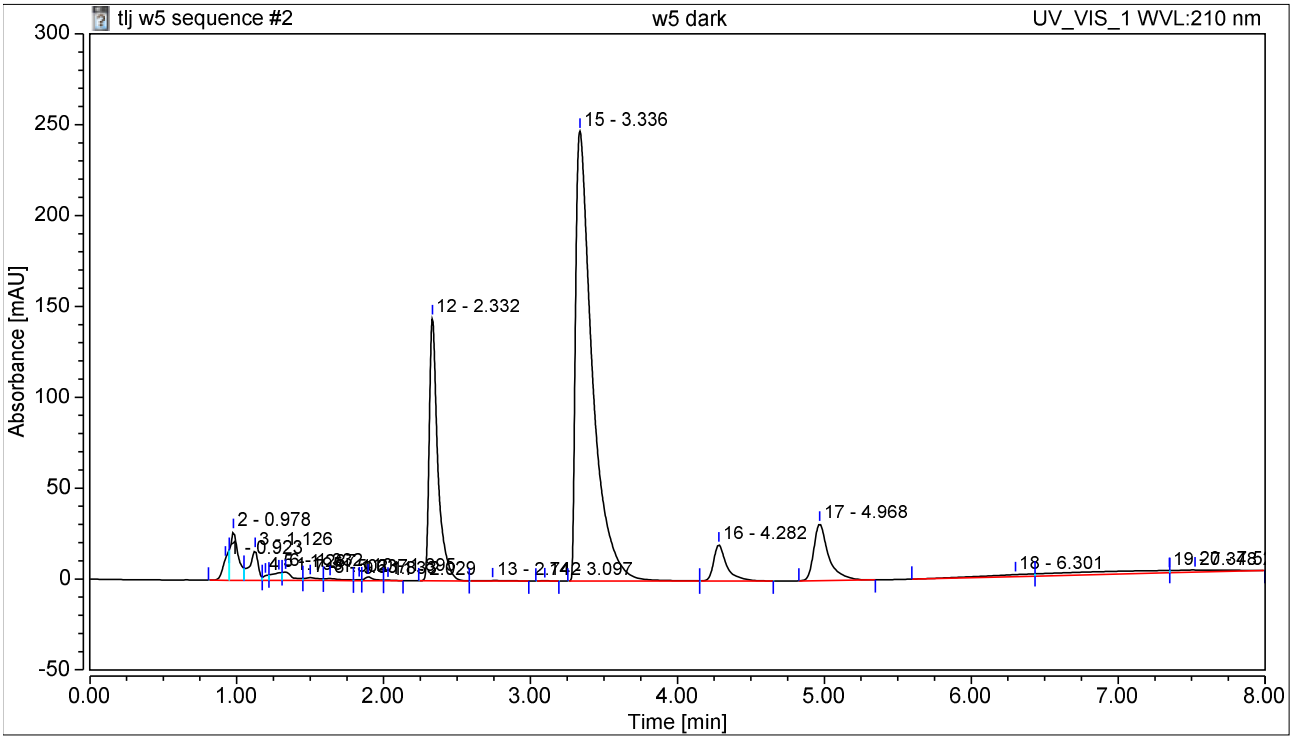
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.923	0.649	11.665	1.17	2.25	n.a.
2		0.978	1.647	26.850	2.98	5.17	n.a.
3		1.126	1.101	16.447	1.99	3.17	n.a.
4		1.195	0.108	2.497	0.20	0.48	n.a.
5		1.287	0.330	4.174	0.60	0.80	n.a.
6		1.332	0.350	4.588	0.63	0.88	n.a.
7		1.502	0.165	1.543	0.30	0.30	n.a.
8		1.637	0.138	1.099	0.25	0.21	n.a.
9		1.833	0.025	0.528	0.04	0.10	n.a.
10		1.895	0.138	2.064	0.25	0.40	n.a.
11		2.029	0.020	0.276	0.04	0.05	n.a.
12		2.332	9.800	144.863	17.74	27.89	n.a.
13		2.742	0.050	0.226	0.09	0.04	n.a.
14		3.097	0.014	0.164	0.02	0.03	n.a.
15		3.336	32.703	247.740	59.22	47.69	n.a.
16		4.282	2.054	19.936	3.72	3.84	n.a.
17		4.968	3.636	31.174	6.58	6.00	n.a.
18		6.301	0.473	1.121	0.86	0.22	n.a.
19		7.348	1.329	1.268	2.41	0.24	n.a.
20		7.523	0.496	1.237	0.90	0.24	n.a.
Total:			**55.226**	**519.460**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w5 dark**	*Run Time (min):*	**8.00**
Vial Number:	**1**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

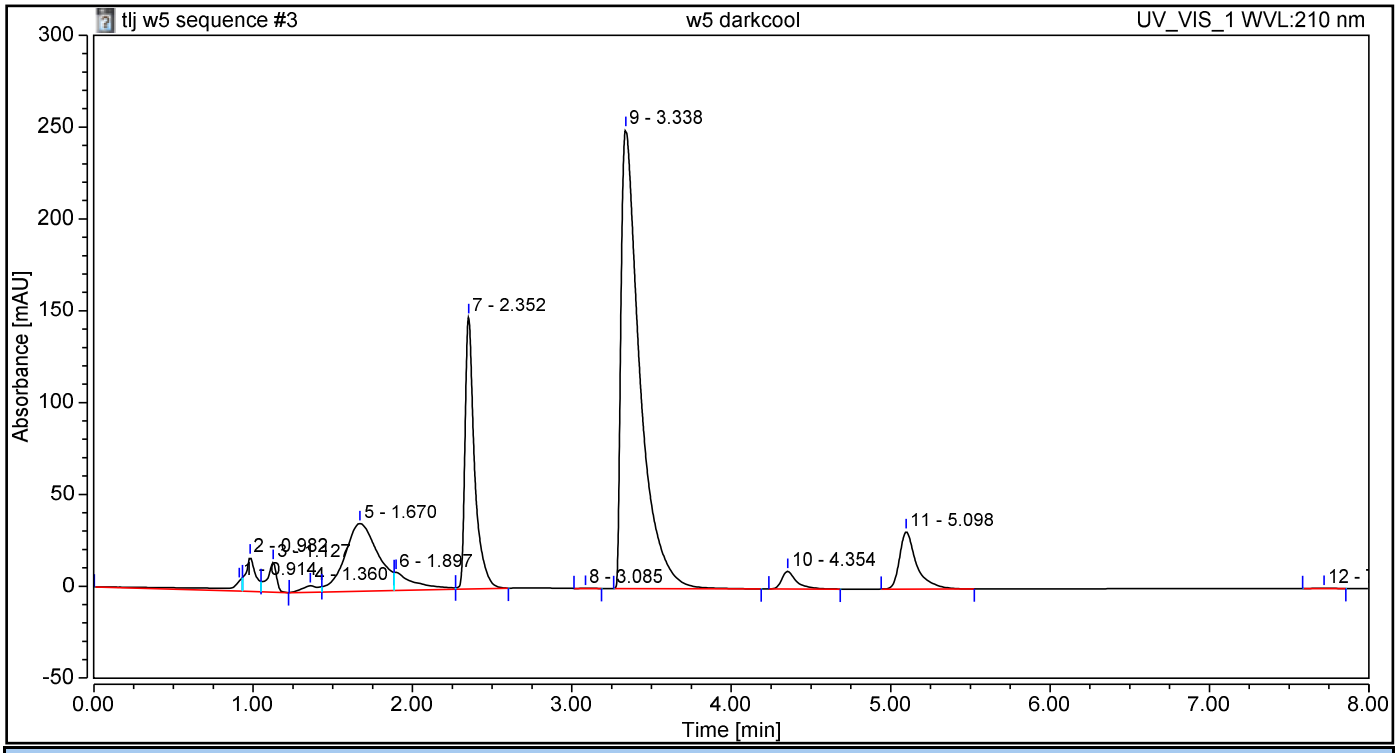
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w5 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

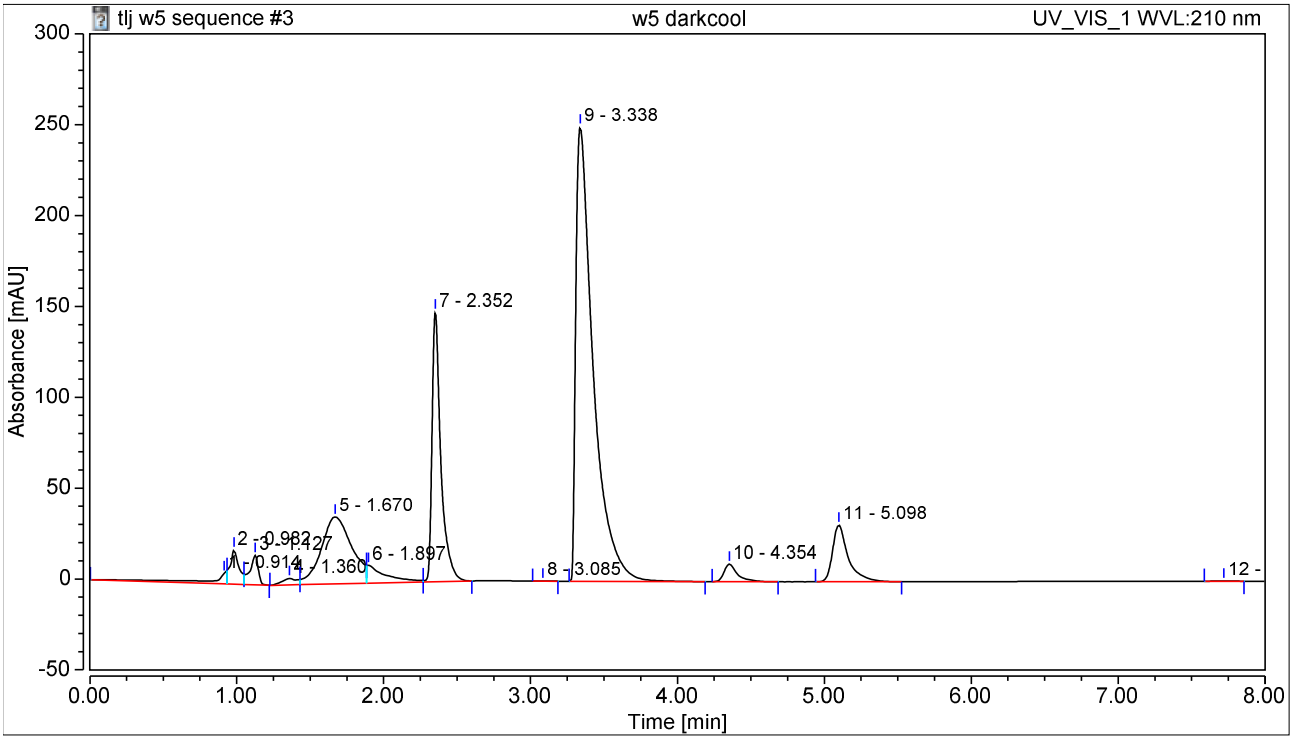
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.914	0.893	5.695	1.41	1.07	n.a.
2		0.982	1.288	18.793	2.03	3.54	n.a.
3		1.127	1.066	16.203	1.68	3.05	n.a.
4		1.360	0.425	3.578	0.67	0.67	n.a.
5		1.670	8.843	36.895	13.93	6.95	n.a.
6		1.897	1.447	9.870	2.28	1.86	n.a.
7		2.352	10.321	148.437	16.26	27.96	n.a.
8		3.085	0.011	0.149	0.02	0.03	n.a.
9		3.338	34.271	250.182	53.99	47.12	n.a.
10		4.354	1.037	9.701	1.63	1.83	n.a.
11		5.098	3.849	31.227	6.06	5.88	n.a.
12		7.719	0.026	0.199	0.04	0.04	n.a.
Total:			**63.475**	**530.929**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w5 darkcool**	*Run Time (min):*	**8.00**
Vial Number:	**2**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

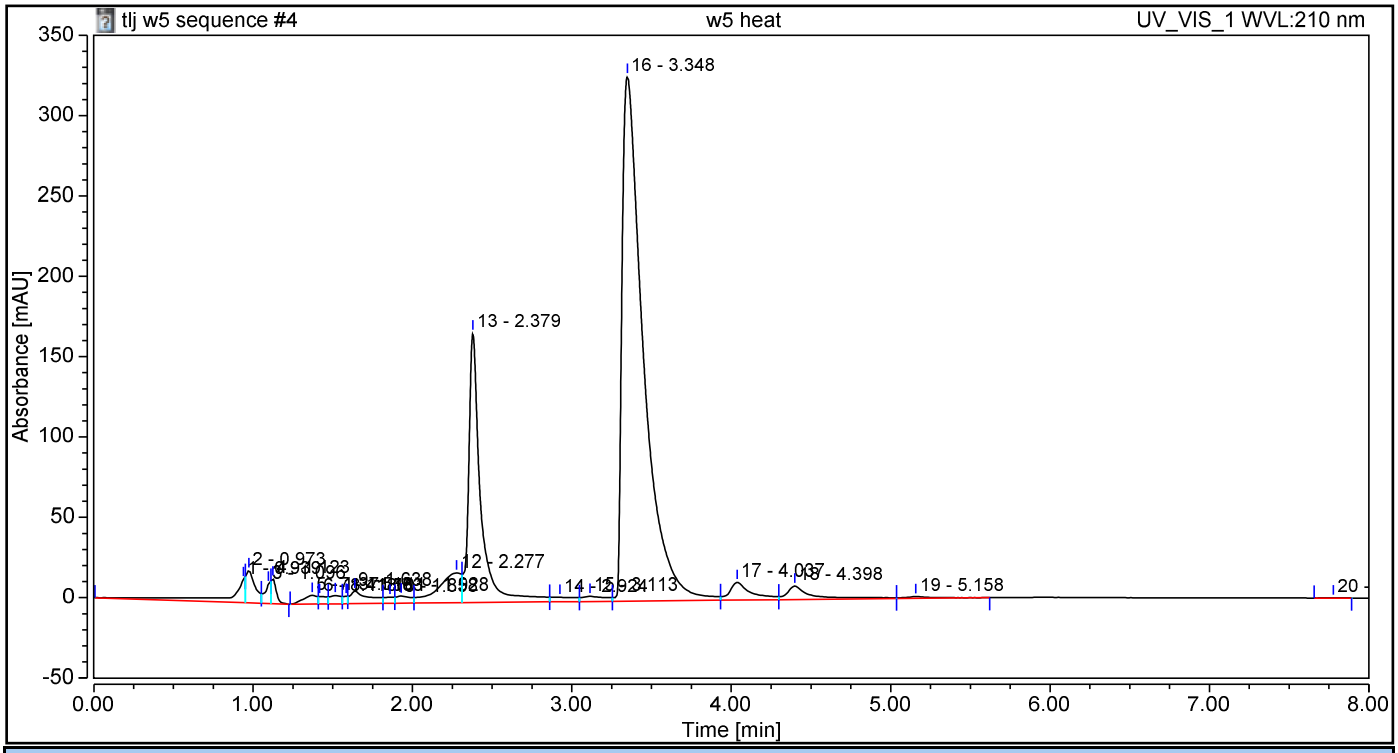
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w5 heat**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 16:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

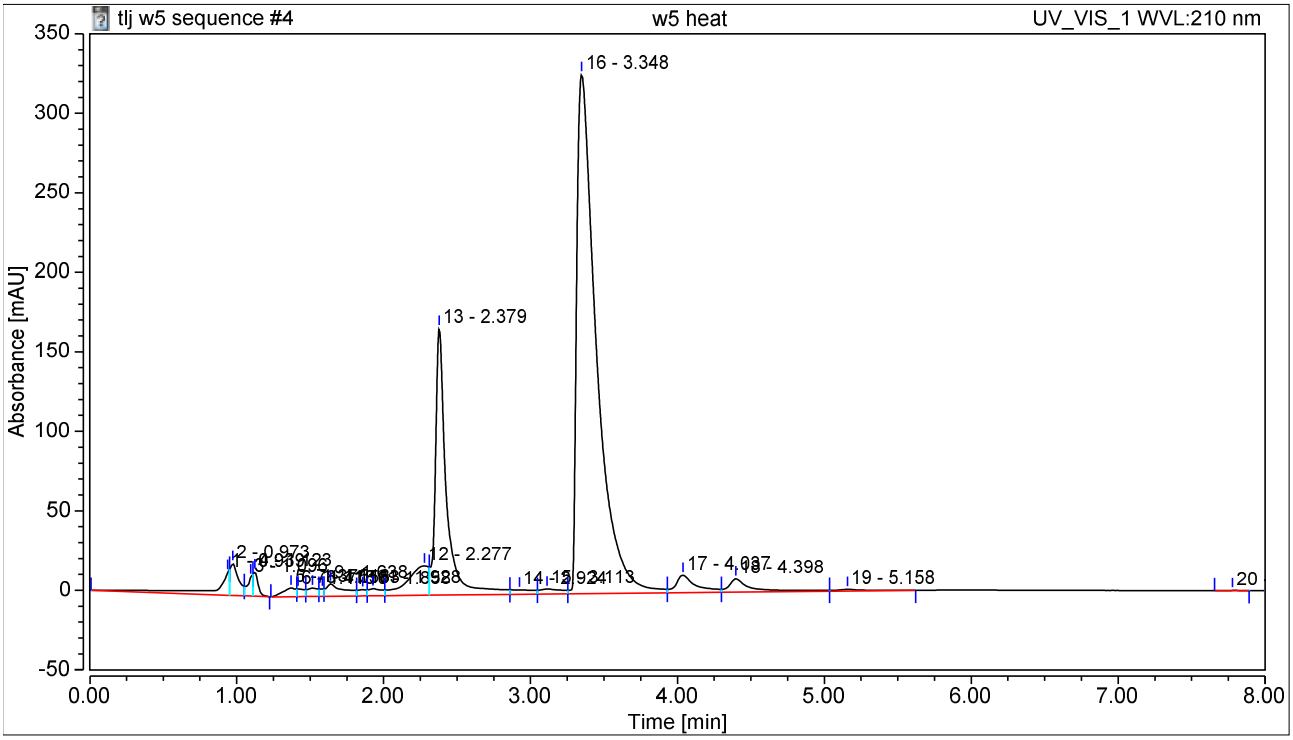
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.939	1.925	14.484	2.40	2.27	n.a.
2		0.973	1.301	20.080	1.62	3.15	n.a.
3		1.096	0.534	12.041	0.66	1.89	n.a.
4		1.123	0.580	15.497	0.72	2.43	n.a.
5		1.371	0.546	5.439	0.68	0.85	n.a.
6		1.418	0.281	4.740	0.35	0.74	n.a.
7		1.516	0.429	5.252	0.53	0.82	n.a.
8		1.583	0.161	4.635	0.20	0.73	n.a.
9		1.638	1.072	7.810	1.33	1.22	n.a.
10		1.858	0.276	3.910	0.34	0.61	n.a.
11		1.928	0.475	4.484	0.59	0.70	n.a.
12		2.277	3.107	18.542	3.87	2.91	n.a.
13		2.379	14.553	167.865	18.11	26.31	n.a.
14		2.924	0.495	2.789	0.62	0.44	n.a.
15		3.113	0.556	3.271	0.69	0.51	n.a.
16		3.348	50.568	326.561	62.92	51.18	n.a.
17		4.037	1.736	11.048	2.16	1.73	n.a.
18		4.398	1.530	8.410	1.90	1.32	n.a.
19		5.158	0.232	1.108	0.29	0.17	n.a.
20		7.778	0.018	0.144	0.02	0.02	n.a.
Total:			**80.375**	**638.112**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w5 heat**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 16:18**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

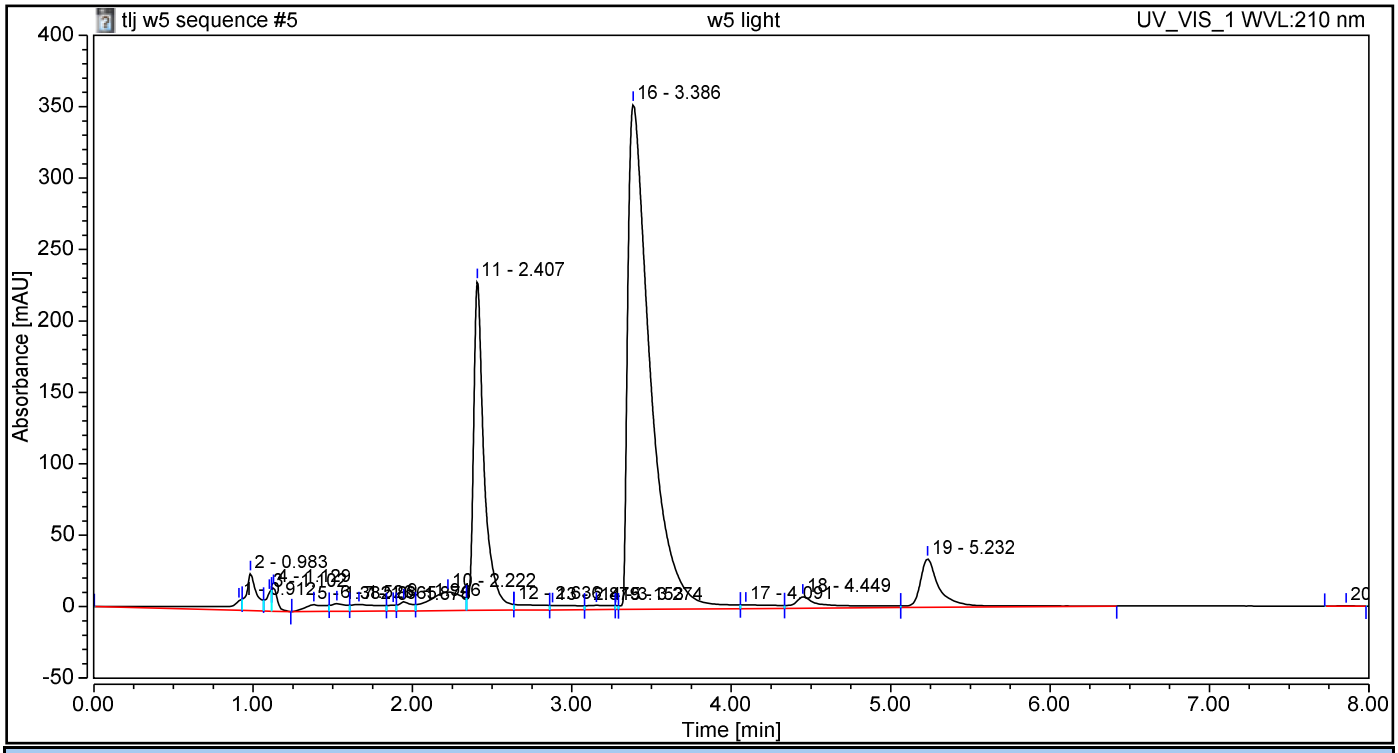
Number of executed test cases: **n.a.** **Total Result:** **Passed**

Chromatogram and Results

Injection Details

Injection Name:	**w5 light**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 16:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

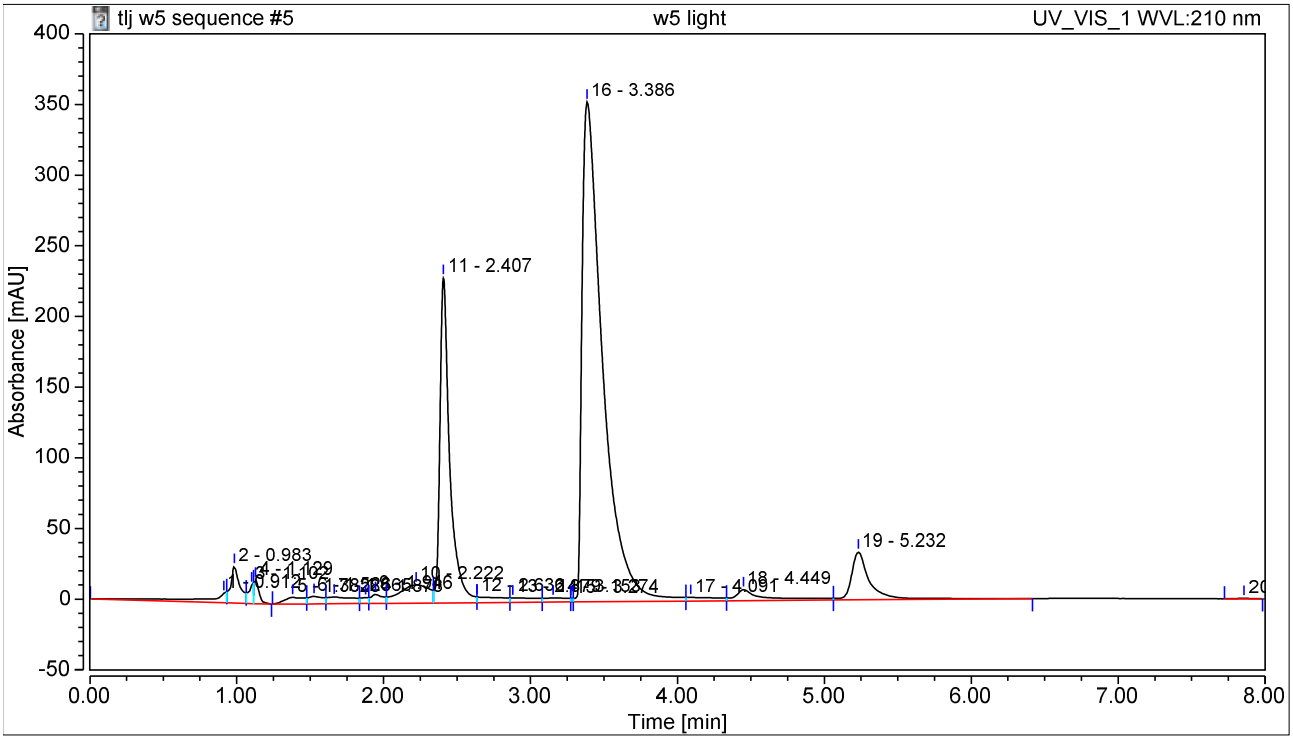
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.912	1.421	6.640	1.49	0.89	n.a.
2		0.983	1.851	25.942	1.94	3.49	n.a.
3		1.102	0.525	13.257	0.55	1.79	n.a.
4		1.129	0.661	16.660	0.69	2.24	n.a.
5		1.382	0.724	4.799	0.76	0.65	n.a.
6		1.526	0.607	5.353	0.64	0.72	n.a.
7		1.665	0.970	4.762	1.02	0.64	n.a.
8		1.878	0.246	4.097	0.26	0.55	n.a.
9		1.946	0.619	6.368	0.65	0.86	n.a.
10		2.222	3.033	12.992	3.18	1.75	n.a.
11		2.407	17.875	230.402	18.72	31.04	n.a.
12		2.636	0.782	3.986	0.82	0.54	n.a.
13		2.879	0.650	3.164	0.68	0.43	n.a.
14		3.153	0.544	2.979	0.57	0.40	n.a.
15		3.274	0.048	2.648	0.05	0.36	n.a.
16		3.386	57.487	353.678	60.22	47.64	n.a.
17		4.091	0.638	2.590	0.67	0.35	n.a.
18		4.449	1.781	7.845	1.87	1.06	n.a.
19		5.232	4.965	33.885	5.20	4.56	n.a.
20		7.857	0.039	0.306	0.04	0.04	n.a.
Total:			**95.465**	**742.354**	**100.00**	**100.00**	

Chromatogram and SST Results

Injection Details

Injection Name:	**w5 light**	*Run Time (min):*	**8.00**
Vial Number:	**3**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Nov/23 16:27**	*Sample Weight:*	**1.0000**

Chromatogram



SST Results

No.	Name	Inj.Condition	Peak	Test Result	Injection

Number of executed test cases: **n.a.** **Total Result:** **Passed**

Summary

Sequence Details

Name:	**tlj w5 sequence**	*Created On:*	**15/Nov/23 15:41:00**
Directory:	**Instrument Data\HPLC\Sequences\CH376K\tlj**	*Created By:*	**student**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**15/Nov/23 16:36:11**
No. of Injections:	**5**	*Updated By:*	**student**

By Component **n.a.**

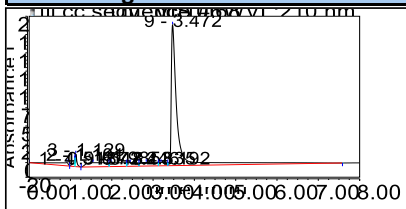
No.	Injection Name	Ret.Time min [0.89..0.93] UV_VIS_1	Area mAU*min [0.89..0.93] UV_VIS_1	Height mAU [0.89..0.93] UV_VIS_1	Amount n.a. [0.89..0.93] UV_VIS_1	Rel.Area % [0.89..0.93] UV_VIS_1	Peak Type [0.89..0.93] UV_VIS_1
1	w5 ignore	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	w5 dark	0.923	0.649	11.665	n.a.	1.17	M
3	w5 darkcool	0.914	0.893	5.695	n.a.	1.41	M
4	w5 heat	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	w5 light	0.912	1.421	6.640	n.a.	1.49	M

Chromatogram and Results

Injection Details

Injection Name:	**cc 10.68**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

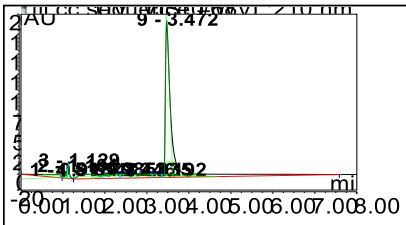
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount n.a.
1		0.918	2.022	4.568	4.24	1.82	n.a.
2		1.101	0.508	10.453	1.07	4.17	n.a.
3		1.129	0.795	17.297	1.67	6.90	n.a.
4		1.547	3.247	5.677	6.81	2.26	n.a.
5		1.985	2.205	5.975	4.63	2.38	n.a.
6		2.446	1.425	5.014	2.99	2.00	n.a.
7		2.835	2.200	4.880	4.62	1.95	n.a.
8		3.192	0.982	4.482	2.06	1.79	n.a.
9		3.472	34.283	192.322	71.92	76.72	n.a.
Total:			**47.667**	**250.668**	**100.00**	**100.00**	

Peak Analysis

Injection Details

Injection Name:	**cc 10.68**	*Run Time (min):*	**8.00**
Vial Number:	**0**	*Injection Volume:*	**20.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**210.0**
Instrument Method:	**instrumentmethod**	*Bandwidth:*	**n.a.**
Processing Method:	**tlj proc**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/Nov/23 15:35**	*Sample Weight:*	**1.0000**

Chromatogram

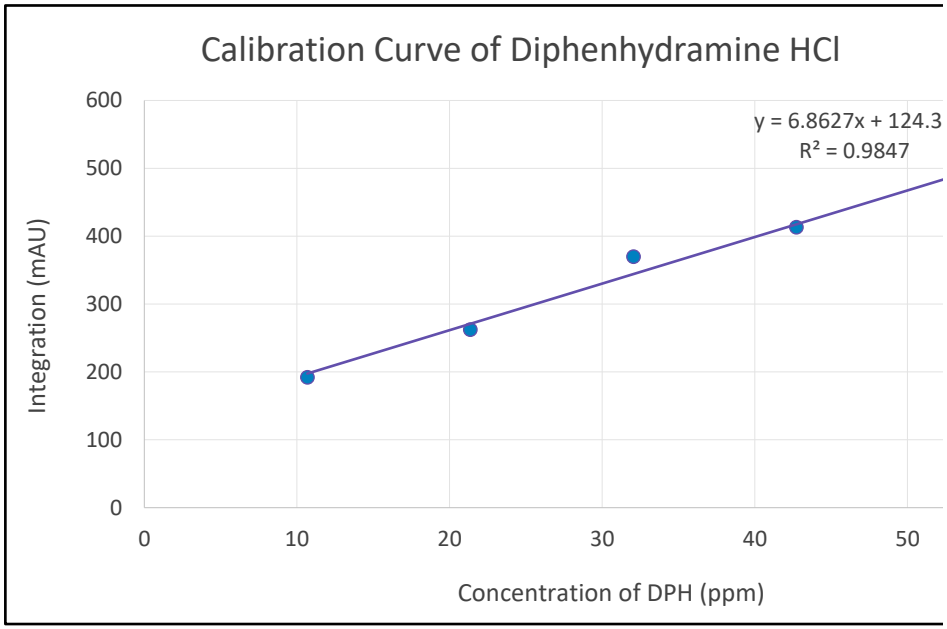


Peak Results

No.	Peak Name	Retention Time min	Width (50%) min	Type	Resolution (EP)	Asymmetry (EP)	Plates (EP)
1		0.918	0.429	BM	n.a.	n.a.	25
2		1.101	n.a.	M	n.a.	n.a.	n.a.
3		1.129	n.a.	M	n.a.	n.a.	n.a.
4		1.547	n.a.	M	n.a.	n.a.	n.a.
5		1.985	n.a.	M	n.a.	n.a.	n.a.
6		2.446	n.a.	M	n.a.	n.a.	n.a.
7		2.835	n.a.	M	n.a.	n.a.	n.a.
8		3.192	n.a.	M	n.a.	n.a.	n.a.
9		3.472	0.114	M	n.a.	3.11	5133

Concentration (	Integration (mAU)
10.68	192.3216
21.36	262.3075
32.04	369.8734
42.72	413.1543
53.4	483.3638
7.551900423	

LOD	LOQ
3.631409124	11.00427
11.00427007	




2
60

Concentration	AU	Dark	Dark Cool	Heat	Light
53.4	483.3638483	266.1008	340.3256		283.804
42.72	413.1543068	254.3246	242.6506		282.894
32.04	369.873395	255.179	253.4521	377.396	315.93
21.36	262.3075453	243.2808	260.3721	333.7596	322.5076
10.68	192.3215721	247.7403	250.1821	326.5614	353.678

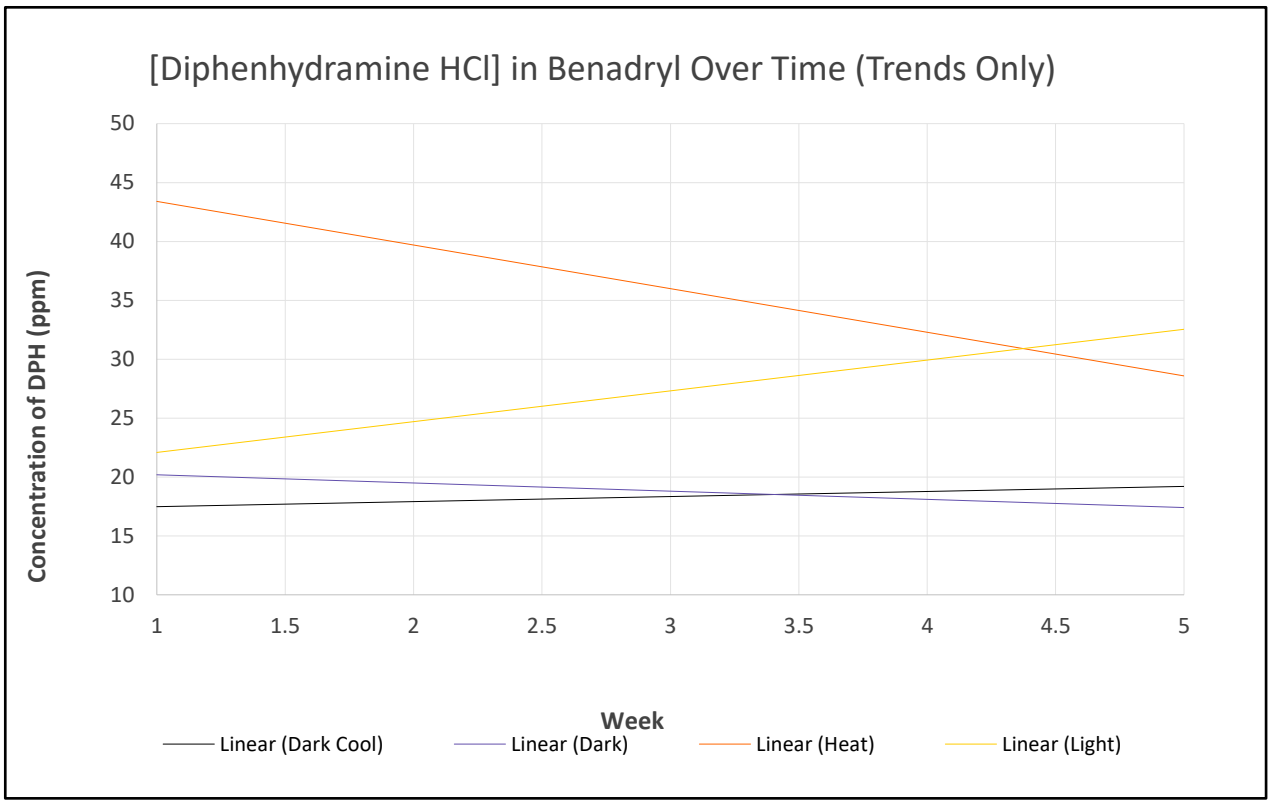
Week	Dark	Dark
1	20.65961857	266.1007644
2	18.94364518	254.3245538
3	19.06815611	255.1790349
4	17.33439953	243.2807837
5	17.98422204	247.7403206

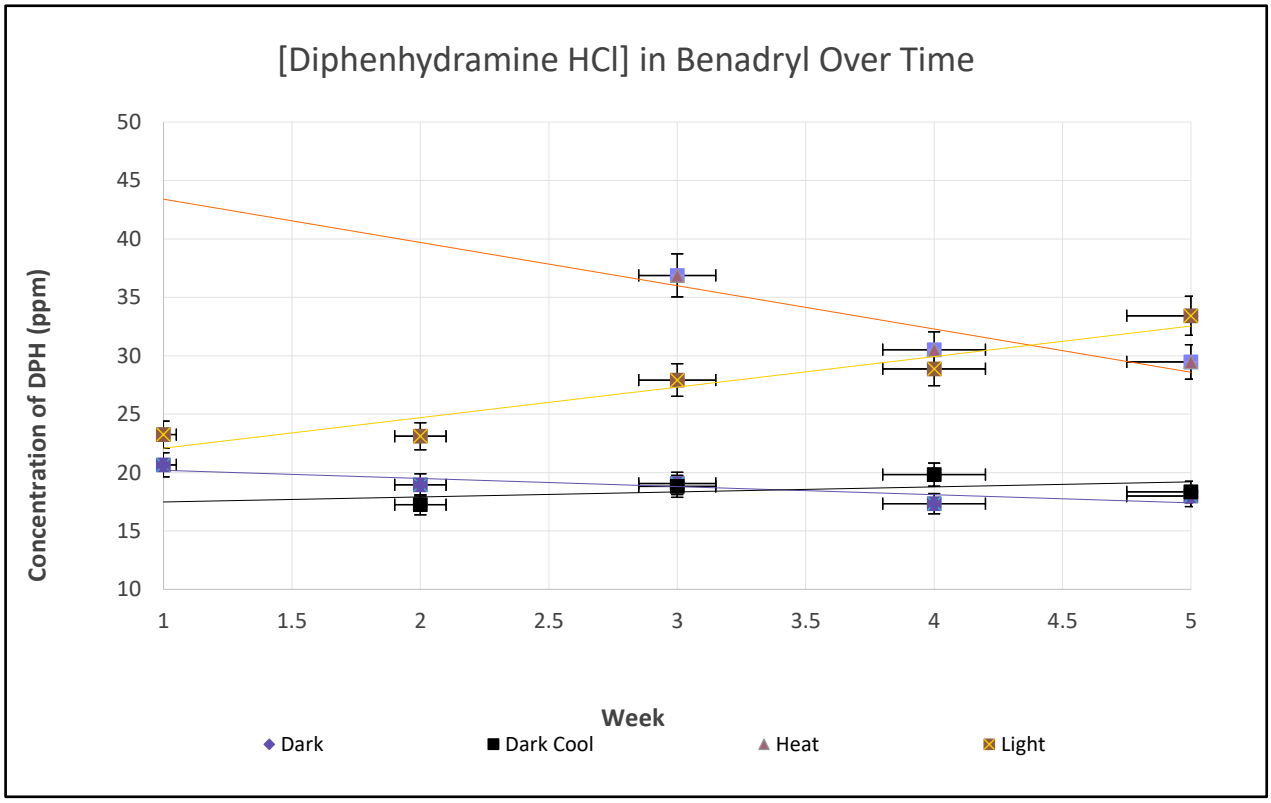
	Dark Cool	Dark Cool
1		340.3255826
2	17.24257026	242.6505869
3	18.81651982	253.4521305
4	19.82486557	260.372105
5	18.34002369	250.1820806

	Heat	Heat
1		
2		
3	36.87703389	377.3960205
4	30.51854574	333.7596239
5	29.46965329	326.5613896

	Light	Light
1	23.23924986	283.804
2	23.10664899	282.894
3	27.92049776	315.93
4	28.87894994	322.5075698
5	33.42095677	353.678

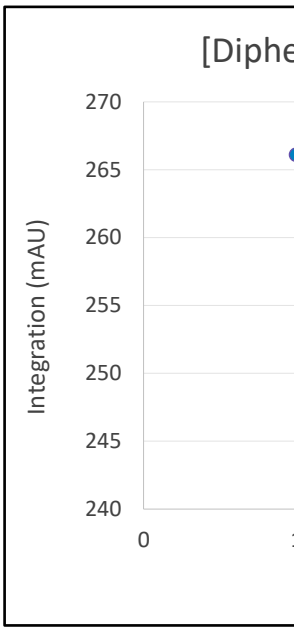
Series	d/dx	d/dx in ppm
Dark	-4.7765	-18.8113279
Dark Cool	-16.257	-20.48421175
Heat	-25.417	-21.81896338
Light	17.936	-15.50177044
Dark Cool w/o	2.95	-17.68545908

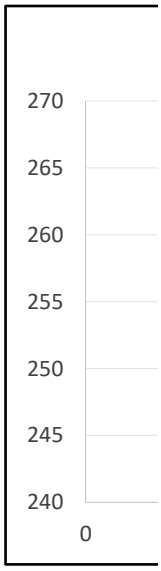

[Diphenhydramine HCl] in Benadryl Over Time (Trends Only)
Concentration of DPH (ppm)
50
45
40
35
30
25
20
15
10
1
1.5
2
2.5
3
3.5
4
4.5
5
Week
Linear (Dark Cool)
Linear (Dark)
Linear (Heat)
Linear (Light)

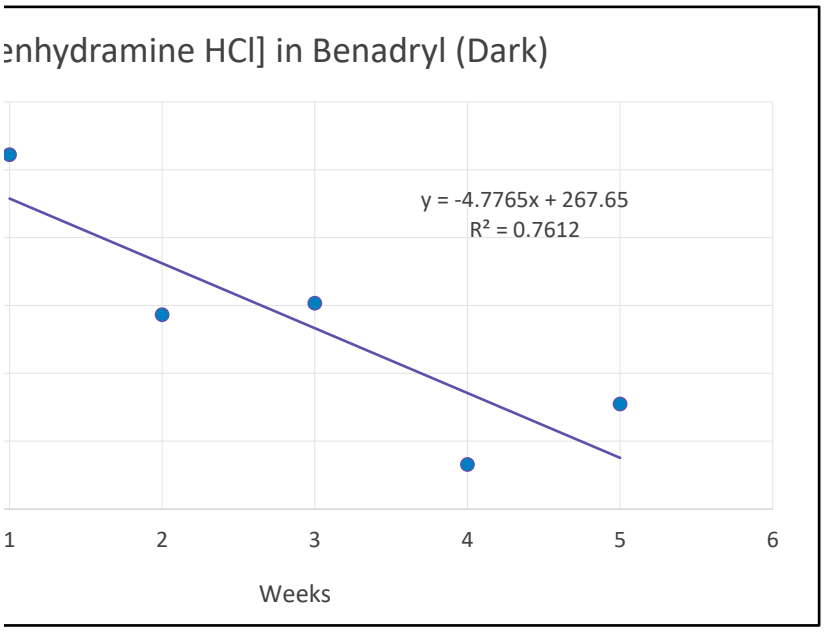

[Diphenhydramine HCl] in Benadryl Over Time
Concentration of DPH (ppm)
50
45
40
35
30
25
20
15
10
1
1.5
2
2.5
3
3.5
4
4.5
5
Week
Dark
Dark Cool
Heat
Light

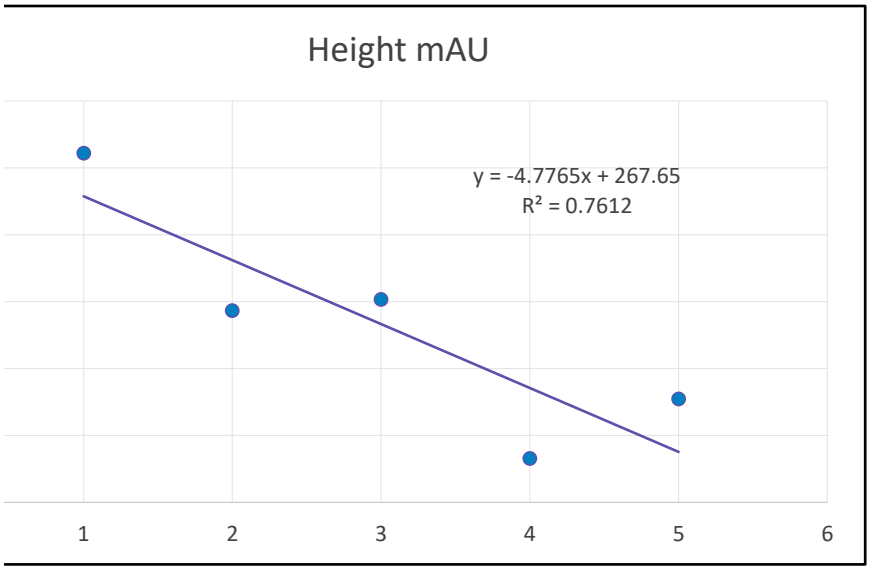
Dark

Week	Height mAU	d/dx
1	266.1007644	-11.7762
2	254.3245538	0.854481
3	255.1790349	-11.8983
4	243.2807837	4.459537
5	247.7403206	



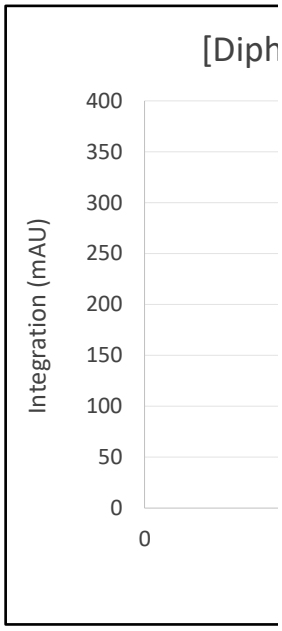


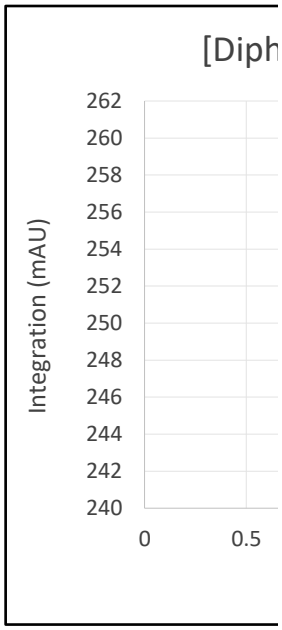

enhydramine HCl] in Benadryl (Dark)
y = -4.7765x + 267.65
R² = 0.7612
1
2
3
4
5
6
Weeks

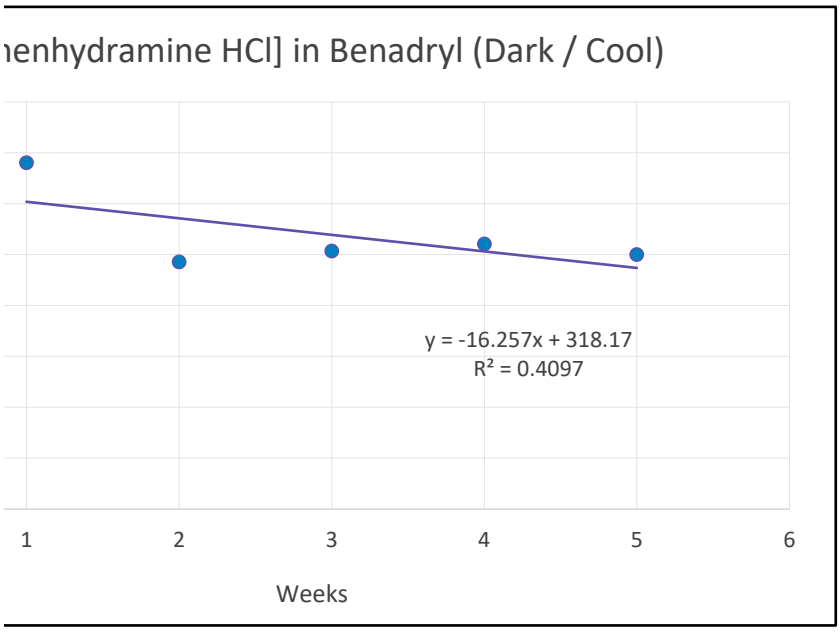

Height mAU
y = -4.7765x + 267.65
R² = 0.7612
1
2
3
4
5
6

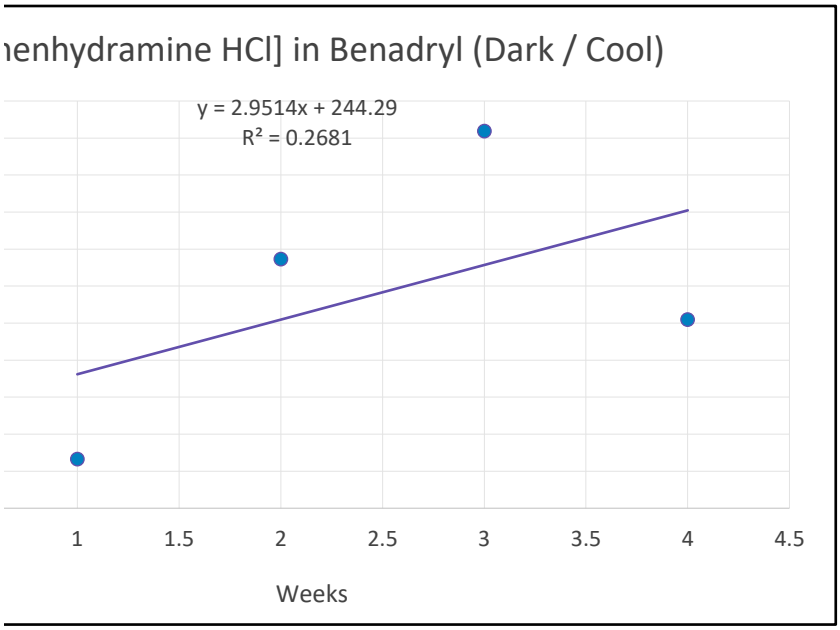
Dark Cool

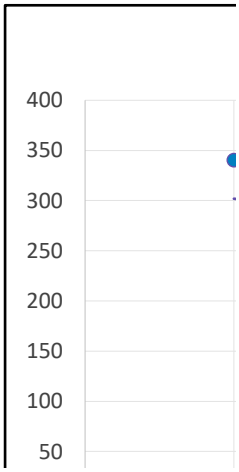
Week	Height mAU	d/dx
1	340.325583	-97.675
2	242.650587	10.80154
3	253.452131	6.919974
4	260.372105	-10.19
5	250.182081	

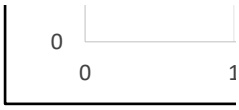


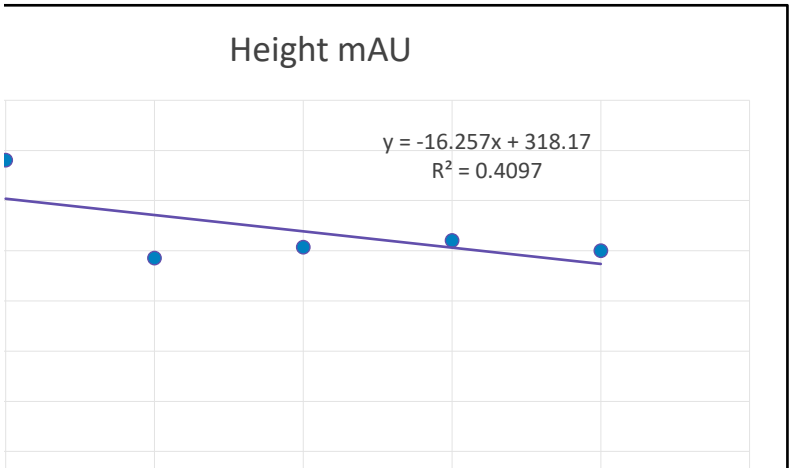



ıenhydramine HCl] in Benadryl (Dark / Cool)
y = -16.257x + 318.17
R² = 0.4097
1
2
3
4
5
6
Weeks


ıenhydramine HCl] in Benadryl (Dark / Cool)
y = 2.9514x + 244.29
R² = 0.2681
1
1.5
2
2.5
3
3.5
4
4.5
Weeks

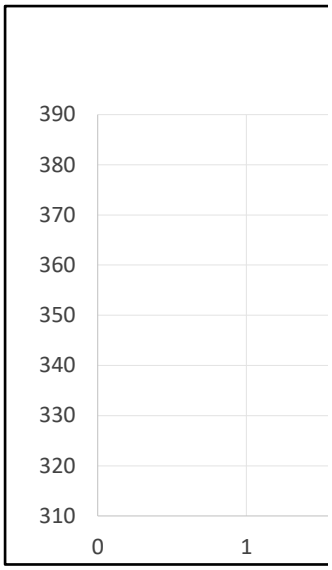

400
350
300
250
200
150
100
50

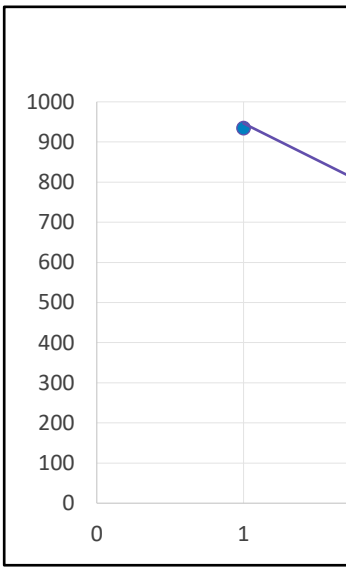

0
0
1


Height mAU
y = -16.257x + 318.17
R² = 0.4097


1
2
3
4
5
6

Week	Height mAU	d/dx
1	934.545063	4.452926
2	938.997989	-561.602
3	377.396021	-43.6364
4	333.759624	-7.19823
5	326.56139	





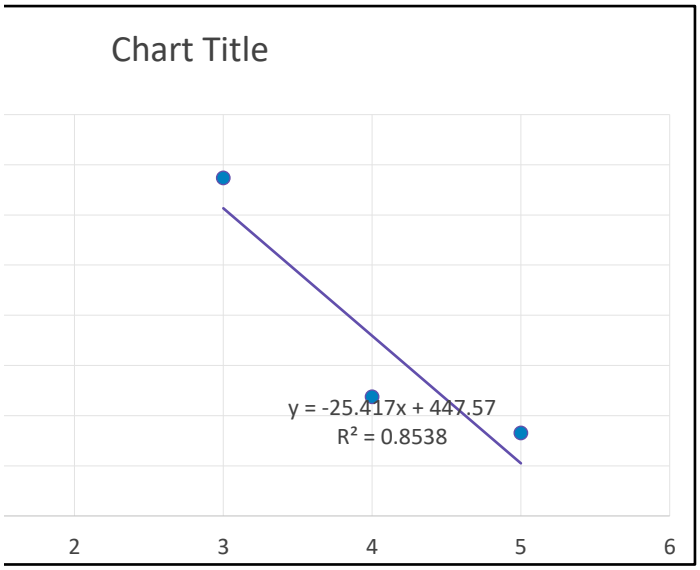
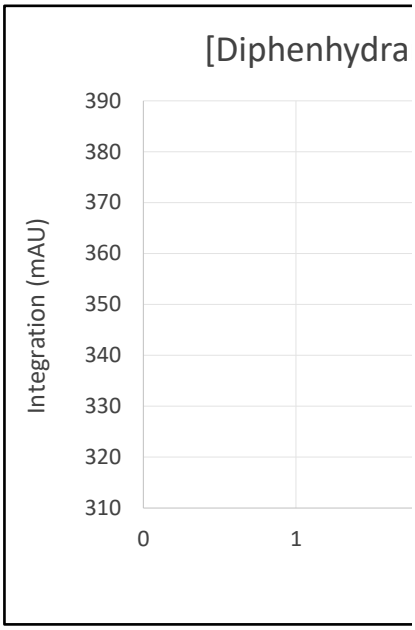


Chart Title
y = -25.417x + 447.57
R² = 0.8538
2
3
4
5
6


[Diphenhydra
Integration (mAU)
390
380
370
360
350
340
330
320
310
0
1

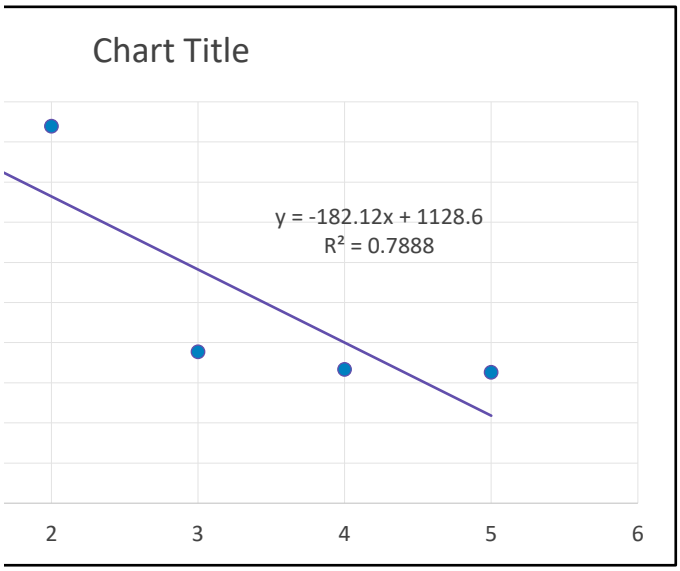
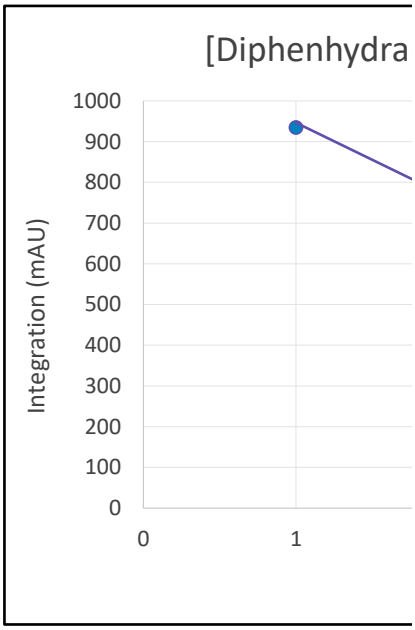
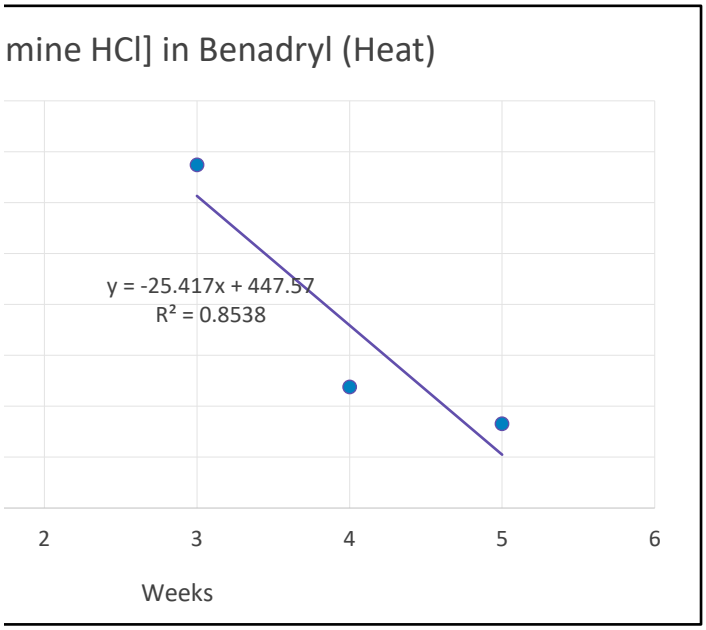
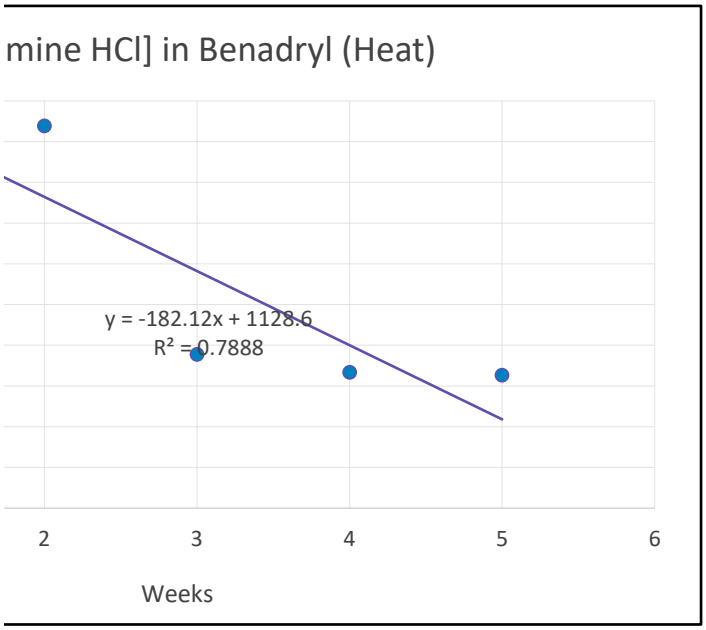


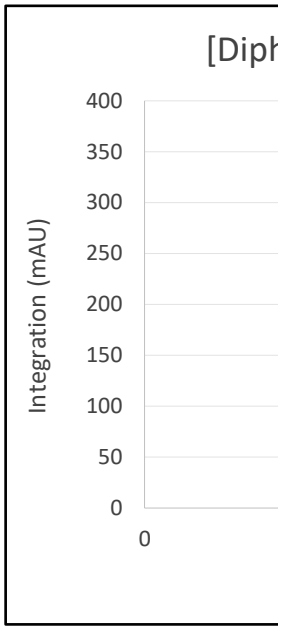
Chart Title
y = -182.12x + 1128.6
R² = 0.7888
2
3
4
5
6

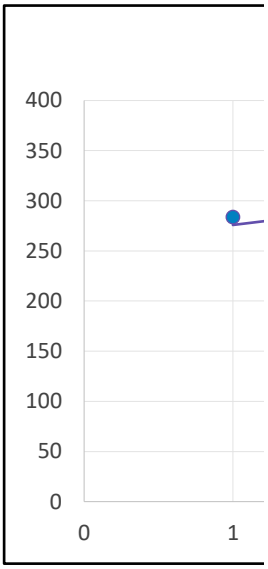

[Diphenhydra
Integration (mAU)
1000
900
800
700
600
500
400
300
200
100
0
0
1

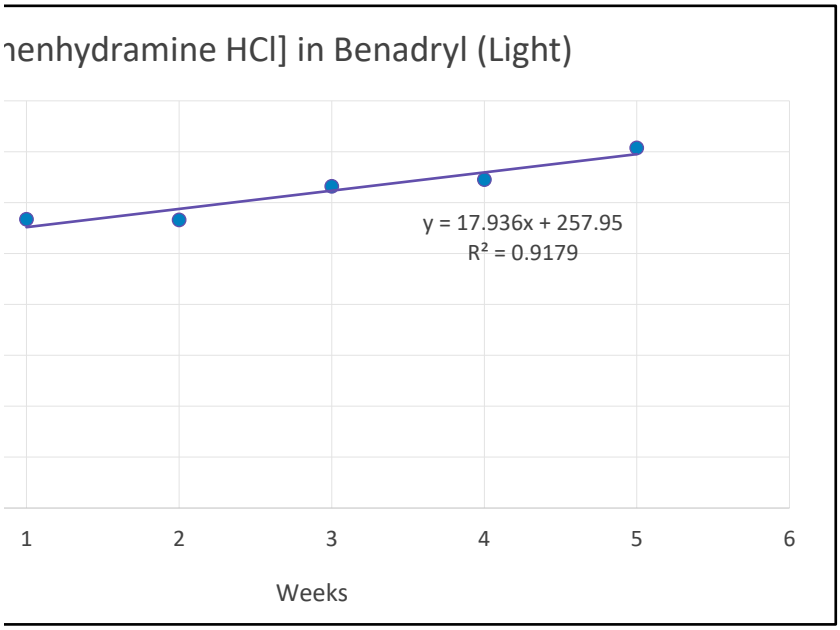

mine HCl] in Benadryl (Heat)
y = -25.417x + 447.57
R² = 0.8538
2
3
4
5
6
Weeks

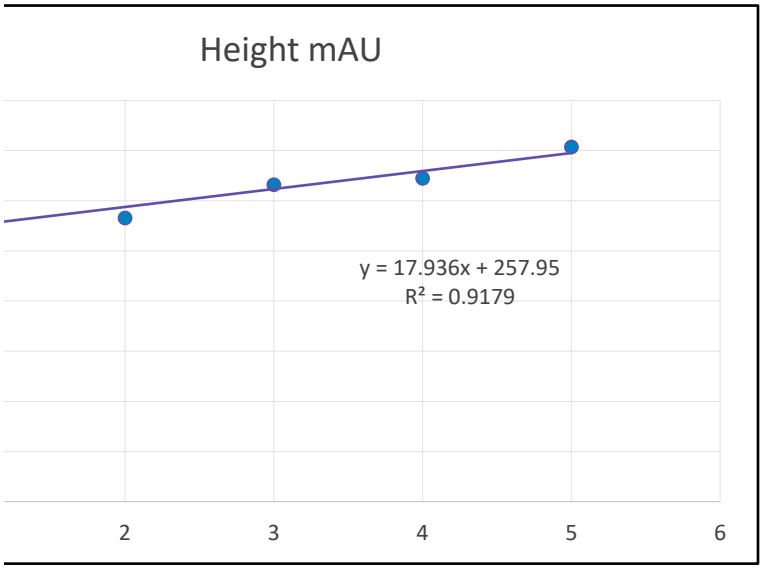

mine HCl] in Benadryl (Heat)
y = -182.12x + 1128.6
R² = 0.7888
2
3
4
5
6
Weeks

Week	Height mAU	d/dx
1	283.804	-0.91
2	282.894	33.036
3	315.93	6.57757
4	322.50757	31.17043
5	353.678	






ıenhydramine HCl] in Benadryl (Light)
y = 17.936x + 257.95
R² = 0.9179
1
2
3
4
5
6
Weeks


Height mAU
y = 17.936x + 257.95
R² = 0.9179
2
3
4
5
6