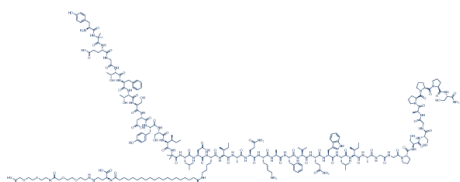





Certificate of Analysis



Compound:	Tirzepatide	Analysis Date:	17-Aug-2024
CAS:	2023788-19-2	Client:	Wolverine Peptides
Manufacturer:	Wolverine Peptides		
Client Sample ID:	Yellow Cap		
Lot:	TZ 20mg 1 vial	Test Reference:	2408040
Sample Image:			

Sample Testing	Test Method	Acceptance Criteria	Result
Appearance	Visual	White to off-white powder	Pass
Identification by Retention Time	TM-1001	0.98 - 1.02	1.01
Identification by UV Spectral Comparison to Reference Standard	TM-1001	≥ 950	1000
Vial Content (mg)	TM-1001	Per customer specification	20.38mg
Purity	TM-1001	Per customer specification	98.802%

- **Appearance:** This check is to visually verify that the sample matches the expected sample properties. If the sample appearance was different than listed, TrustPointe would reach out to the customer to verify that the correct samples were received.
- The Following Tests Are Performed Using HPLC (High Performance Liquid Chromatography):
 - **Identification by Retention Time:** This is an identification test in which the retention time of the sample is compared to the average retention time of five reference standard injections.
 - **Identification by UV Spectral Comparison to Reference Standard:** This is an identification test in which the UV spectrum of the sample is compared to the UV spectrum of the standard.

- **Vial Content (mg):** This is the amount of the compound in the vial we tested determined by HPLC analysis.
- **Purity:** This is purity of the sample, calculated including peaks around the compound that may be impurities.

Method & System Suitability	Test Method	Acceptance Criteria	Result
Standard + SSC Injection RSD	TM-1001	Standard Bracket Area RSD \leq 2.0%	0.0%
Coelution Control (Peak Purity)	TM-1001	> 950	1000

- **Standard + SSC Injection RSD:** This value shows that the HPLC system was running properly throughout your testing. The %RSD of the standard injections performed before your sample and the standard injection performed after your sample is calculated to ensure there were no system errors during your run. Although system errors such as leaks, a line running dry, air bubbles, etc. are rare, it's important that we demonstrate no errors occurred during analysis.
- **Coelution Control (Peak Purity):** This value demonstrates that there is no co-elution occurring during analysis. We receive samples from a multitude of manufacturers and each has their own recipe (stabilizers, solubilizers, fillers, etc) in their process. This measurement ensures that none of these other components interfere with the analysis. In short, this number confirms that the method is working properly and only analyzing the target compound.

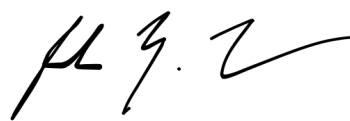
All testing services provided by TrustPointe Analytics LLC are subject to our [Terms of Service](#). Learn [How To Read a COA](#).

Created By:



Ashlee Lust 17-Aug-2024

Reviewed By:



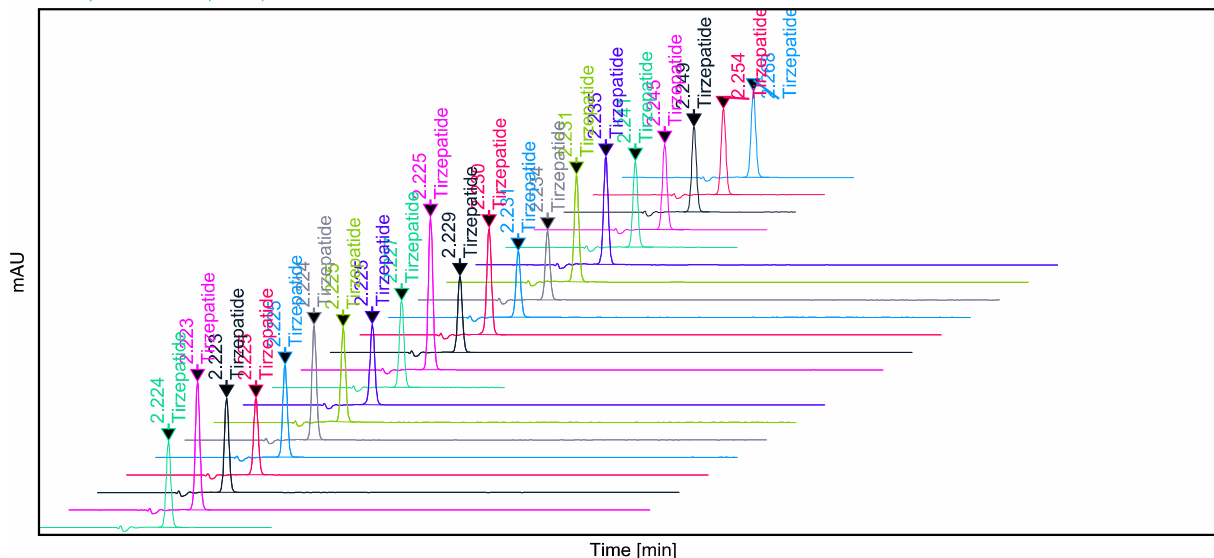
Joshua Lust 17-Aug-2024

Sample Potency and ID Report

Sequence Name 1001_aml_081624

Sequence Acquired Date 2024-08-16 18:28:55-04:00

Tirzepatide Std - 1
Sample ID 2408032 - 1
Sample ID 2408037
Sample ID 2408041
Tirzepatide Std - 7 (SSC2)
Tirzepatide Std - 2
Sample ID 2408032 - 2
Sample ID 2408038
Sample ID 2408047
Tirzepatide Std - 3
Sample ID 2408033 - 1
Tirzepatide Std - 6 (SSC1)
Sample ID 2408049
Tirzepatide Std - 4
Sample ID 2408033 - 2
Sample ID 2408039
Sample ID 2408052
Tirzepatide Std - 5
Sample ID 2408035
Sample ID 2408040
Sample ID 2408030



Sample Name	Name	RT	Area	Multiplier	Amount	Unit	UV Match Factor	Peak Purity	Peak Tail Factor
Tirzepatide Std - 1	Tirzepatide	2.268	96	1;1;1;1;1	9.41	%	1000	1000	1.1
Tirzepatide Std - 2	Tirzepatide	2.254	96	1;1;1;1;1	9.37	%	1000	1000	1.0
Tirzepatide Std - 3	Tirzepatide	2.249	96	1;1;1;1;1	9.38	%	1000	1000	1.1
Tirzepatide Std - 4	Tirzepatide	2.245	96	1;1;1;1;1	9.37	%	1000	1000	1.0
Tirzepatide Std - 5	Tirzepatide	2.241	96	1;1;1;1;1	9.38	%	1000	1000	1.1
Sample ID 2408032 - 1	Tirzepatide	2.235	121	10;1;1;1;1	118.19	%	1000	1000	1.0
Sample ID 2408032 - 2	Tirzepatide	2.231	120	10;1;1;1;1	116.78	%	1000	1000	1.0
Sample ID 2408033 - 1	Tirzepatide	2.234	77	13.33333;1;1;1;1	100.01	%	1000	1000	1.1
Sample ID 2408033 - 2	Tirzepatide	2.231	74	13.33333;1;1;1;1	95.97	%	1000	1000	1.0
Sample ID 2408035	Tirzepatide	2.230	122	8.33333;1;1;1;1	99.12	%	1000	1000	1.0
Sample ID 2408037	Tirzepatide	2.229	85	13.33333;1;1;1;1	110.89	%	1000	1000	1.1
Sample ID 2408038	Tirzepatide	2.225	170	8.33333;1;1;1;1	138.31	%	998	999	1.0
Tirzepatide Std - 6 (SSC1)	Tirzepatide	2.227	96	1;1;1;1;1	9.36	%	1000	1000	1.1
Sample ID 2408039	Tirzepatide	2.225	92	13.33333;1;1;1;1	120.24	%	1000	1000	1.0
Sample ID 2408040	Tirzepatide	2.225	104	10;1;1;1;1	101.89	%	1000	1000	1.1
Sample ID 2408041	Tirzepatide	2.224	127	10;1;1;1;1	123.97	%	1000	1000	1.0

Sample Potency and ID Report

Sample Name	Name	RT	Area	Multiplier	Amount	Unit	UV Match Factor	Peak Purity	Peak Tail Factor
Sample ID 2408047	Tirzepatide	2.225	102	10;1;1;1;1	99.91	%	1000	1000	1.0
Sample ID 2408049	Tirzepatide	2.225	86	13.33333;1;1;1;1	111.42	%	1000	1000	1.1
Sample ID 2408052	Tirzepatide	2.223	105	10;1;1;1;1	102.98	%	1000	1000	1.0
Sample ID 2408030	Tirzepatide	2.223	142	16.66667;1;1;1;1	231.83	%	999	999	1.0
Tirzepatide Std - 7 (SSC2)	Tirzepatide	2.224	96	1;1;1;1;1	9.36	%	1000	1000	1.0

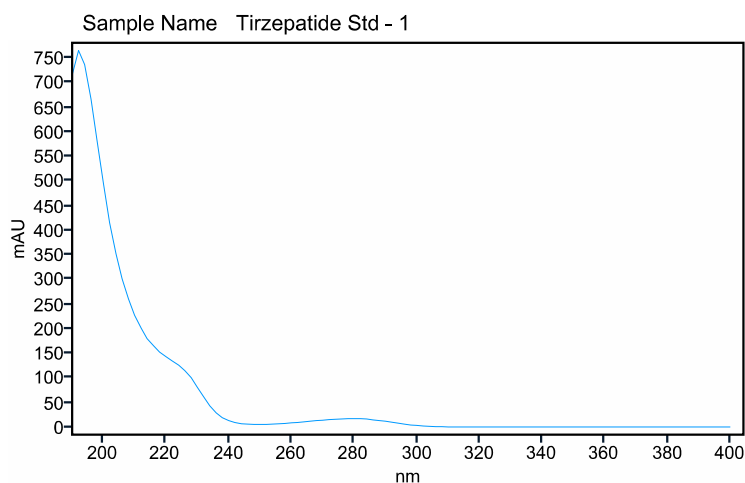
UV Match Spectra

RT:

2.268

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

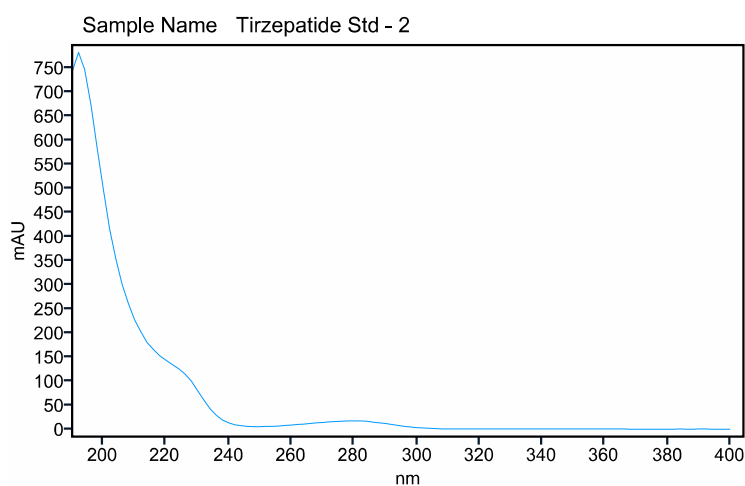
UV Match Spectra

RT:

2.254

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

Sample Potency and ID Report

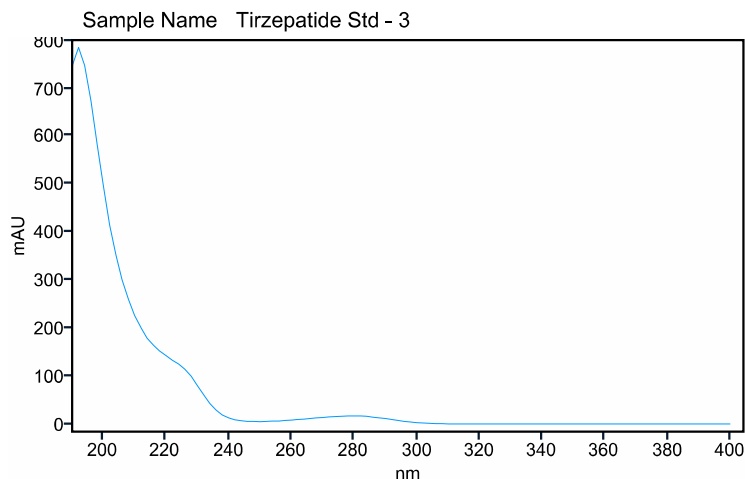
UV Match Spectra

RT:

2.249

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

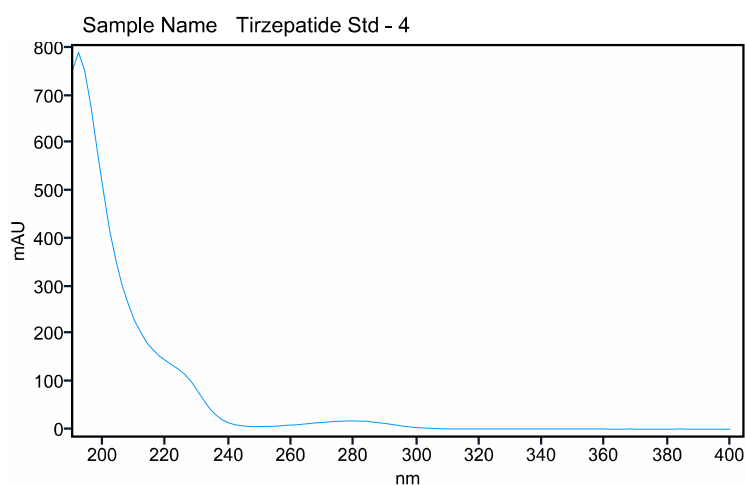
UV Match Spectra

RT:

2.245

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

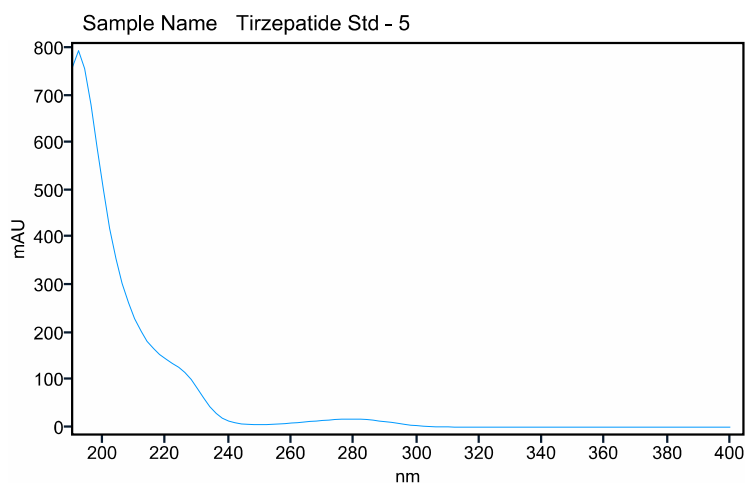
UV Match Spectra

RT:

2.241

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

Sample Potency and ID Report

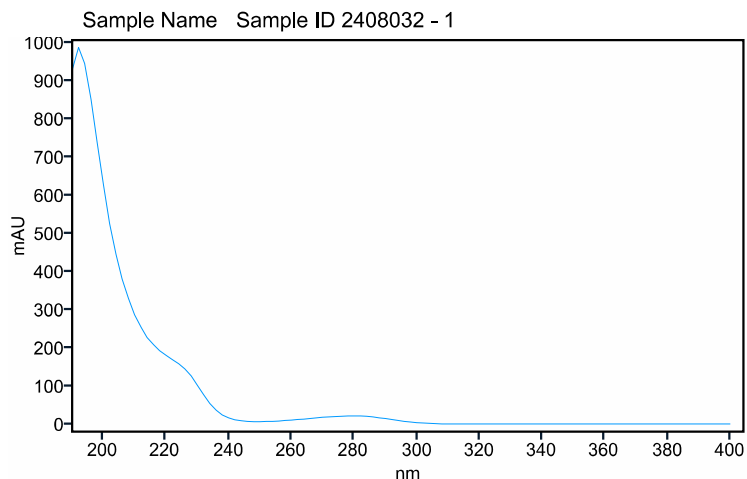
UV Match Spectra

RT:

2.235

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

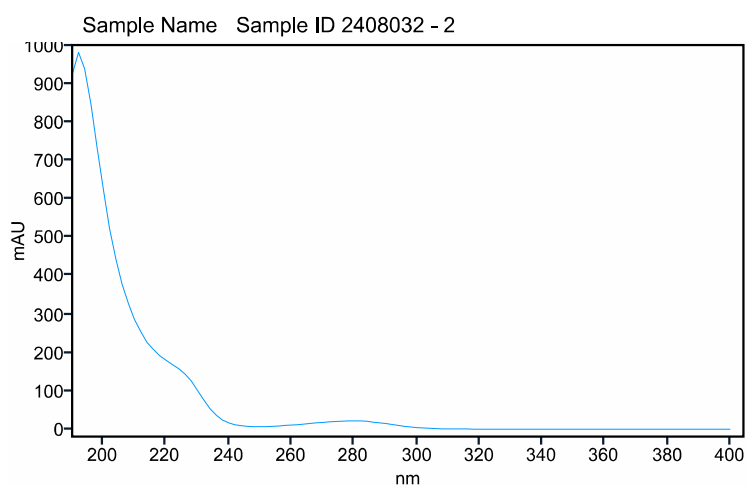
UV Match Spectra

RT:

2.231

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

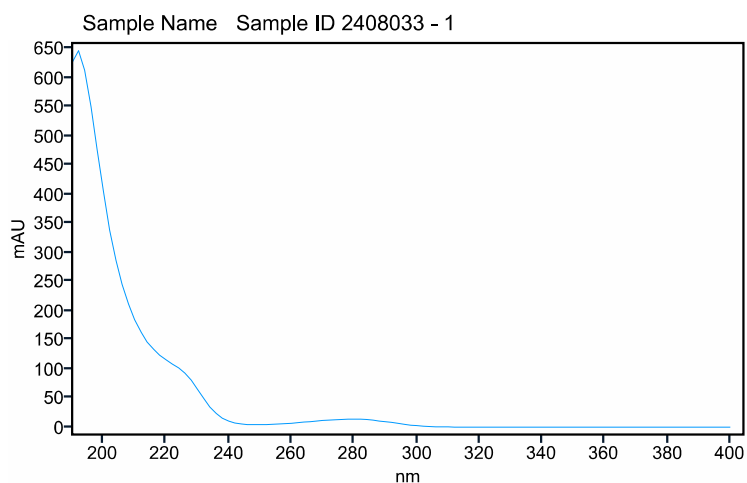
UV Match Spectra

RT:

2.234

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

Sample Potency and ID Report

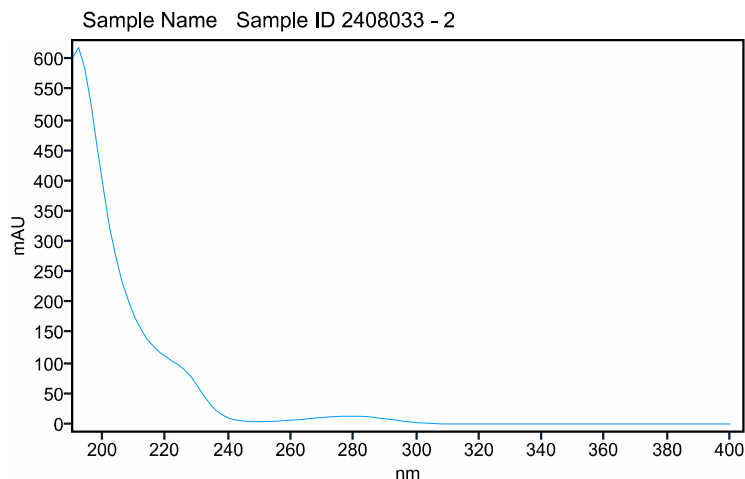
UV Match Spectra

RT:

2.231

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

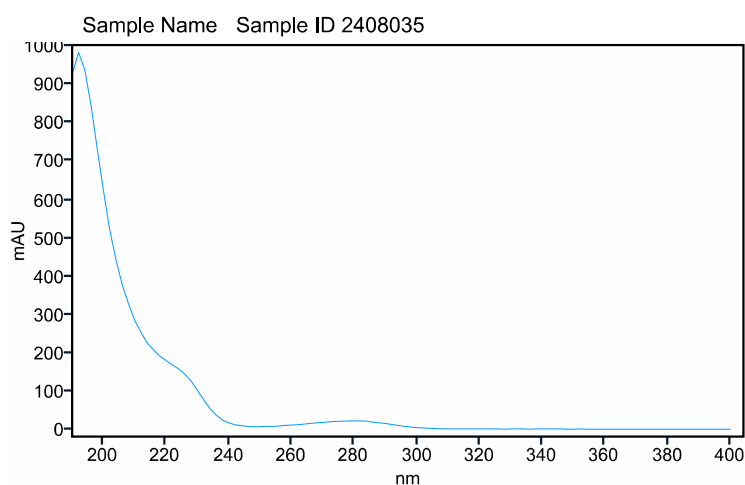
UV Match Spectra

RT:

2.23

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

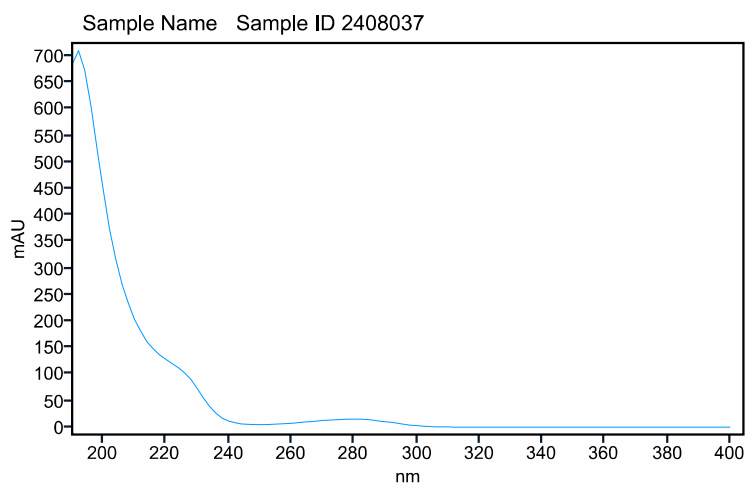
UV Match Spectra

RT:

2.229

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

Sample Potency and ID Report

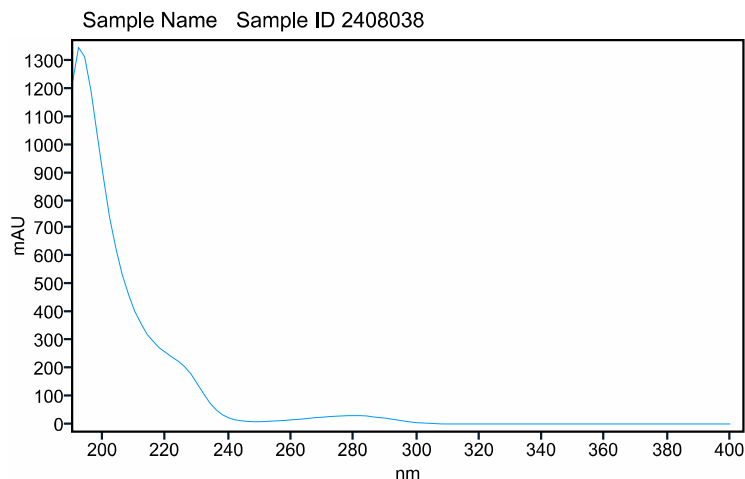
UV Match Spectra

RT:

2.225

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

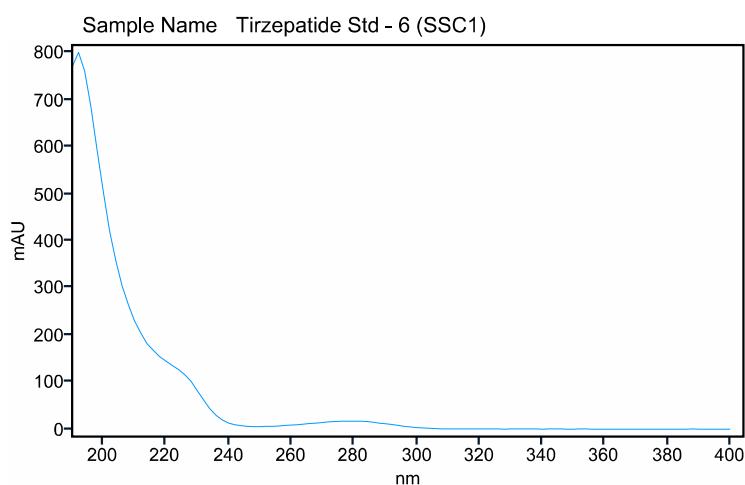
UV Match Spectra

RT:

2.227

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

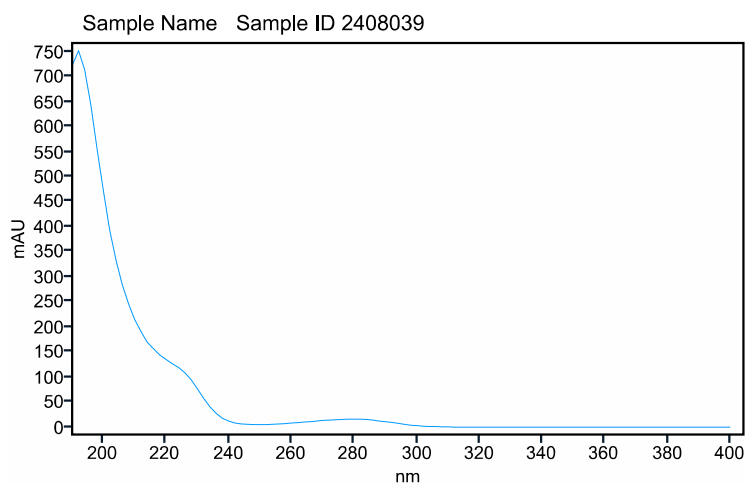
UV Match Spectra

RT:

2.225

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

Sample Potency and ID Report

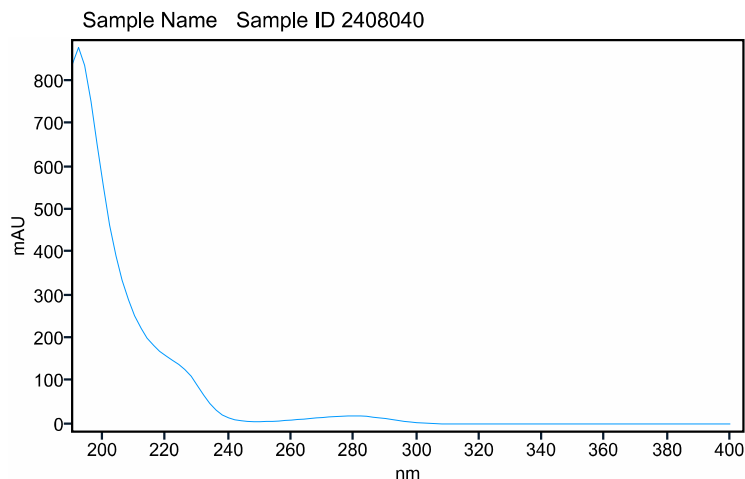
UV Match Spectra

RT:

2.225

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

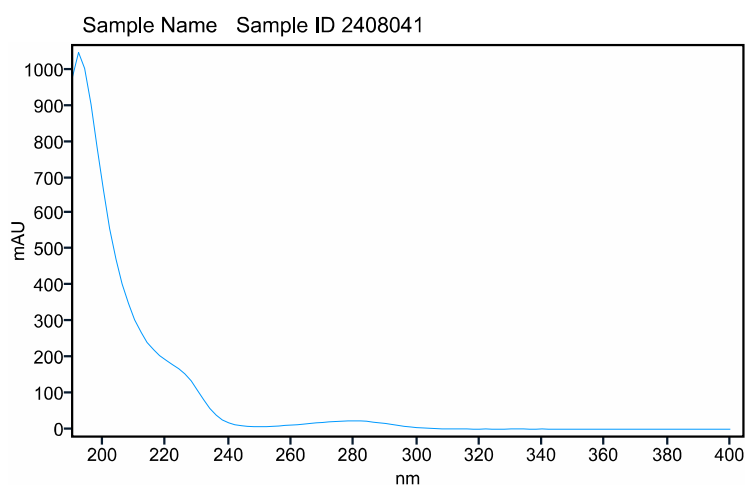
UV Match Spectra

RT:

2.224

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

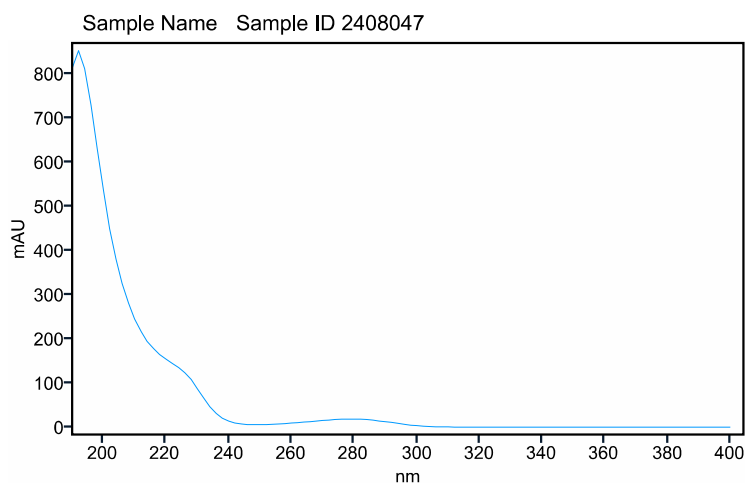
UV Match Spectra

RT:

2.225

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

Sample Potency and ID Report

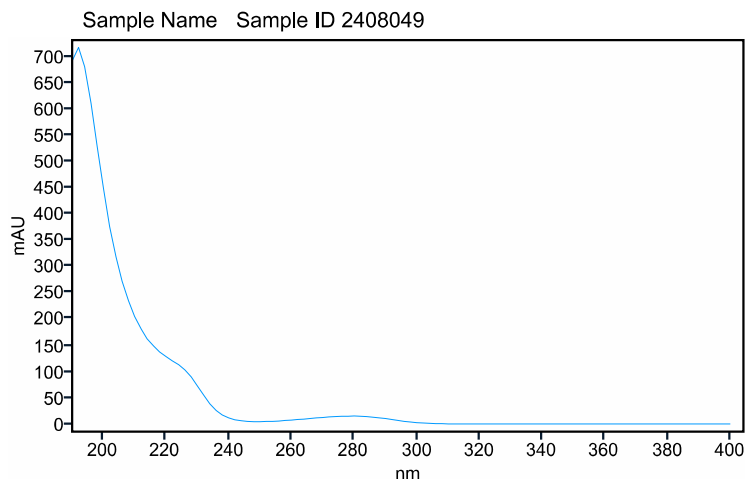
UV Match Spectra

RT:

2.225

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

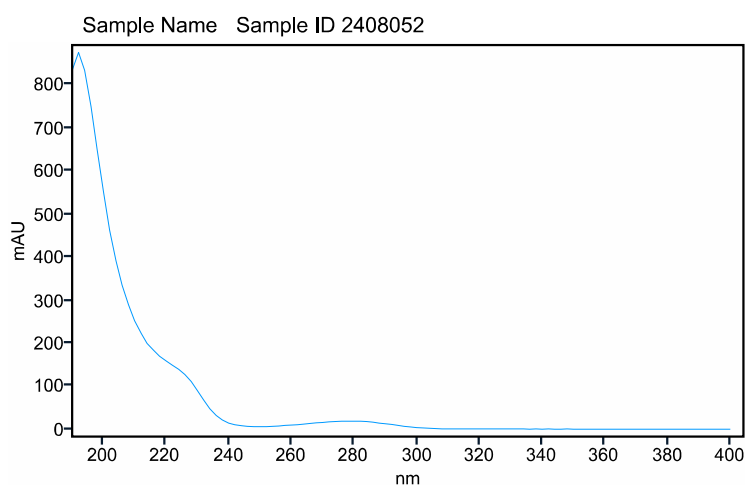
UV Match Spectra

RT:

2.223

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

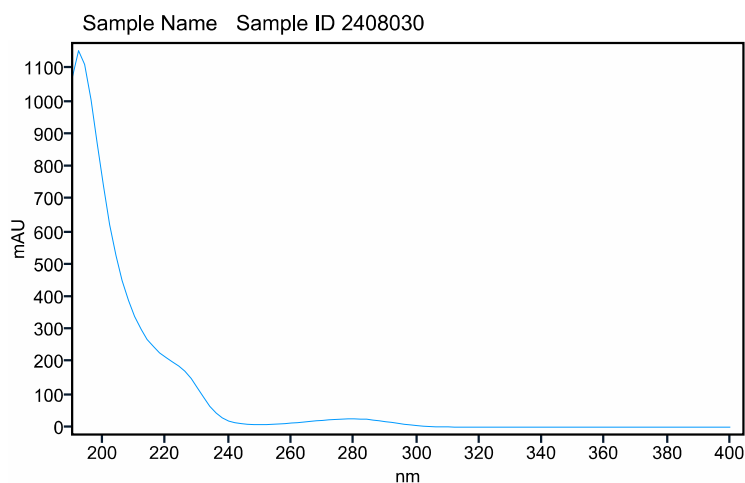
UV Match Spectra

RT:

2.223

Compound Name:

Tirzepatide



Compound Spectra Confirm Result Confirmed

Sample Potency and ID Report

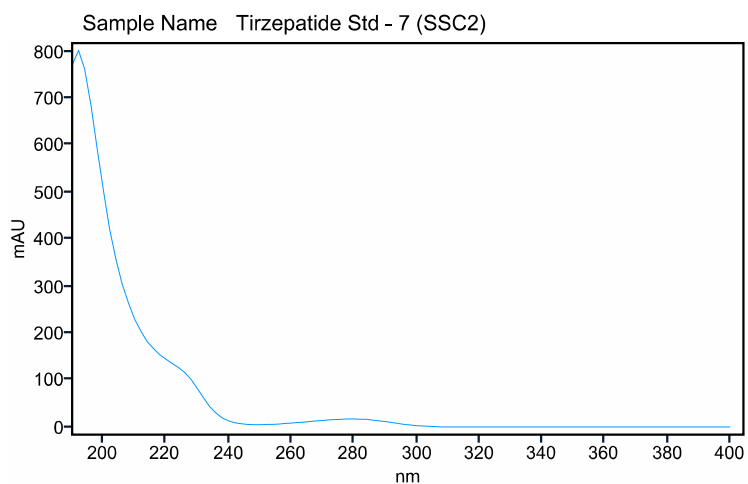
UV Match Spectra

RT:

2.224

Compound Name:

Tirzepatide

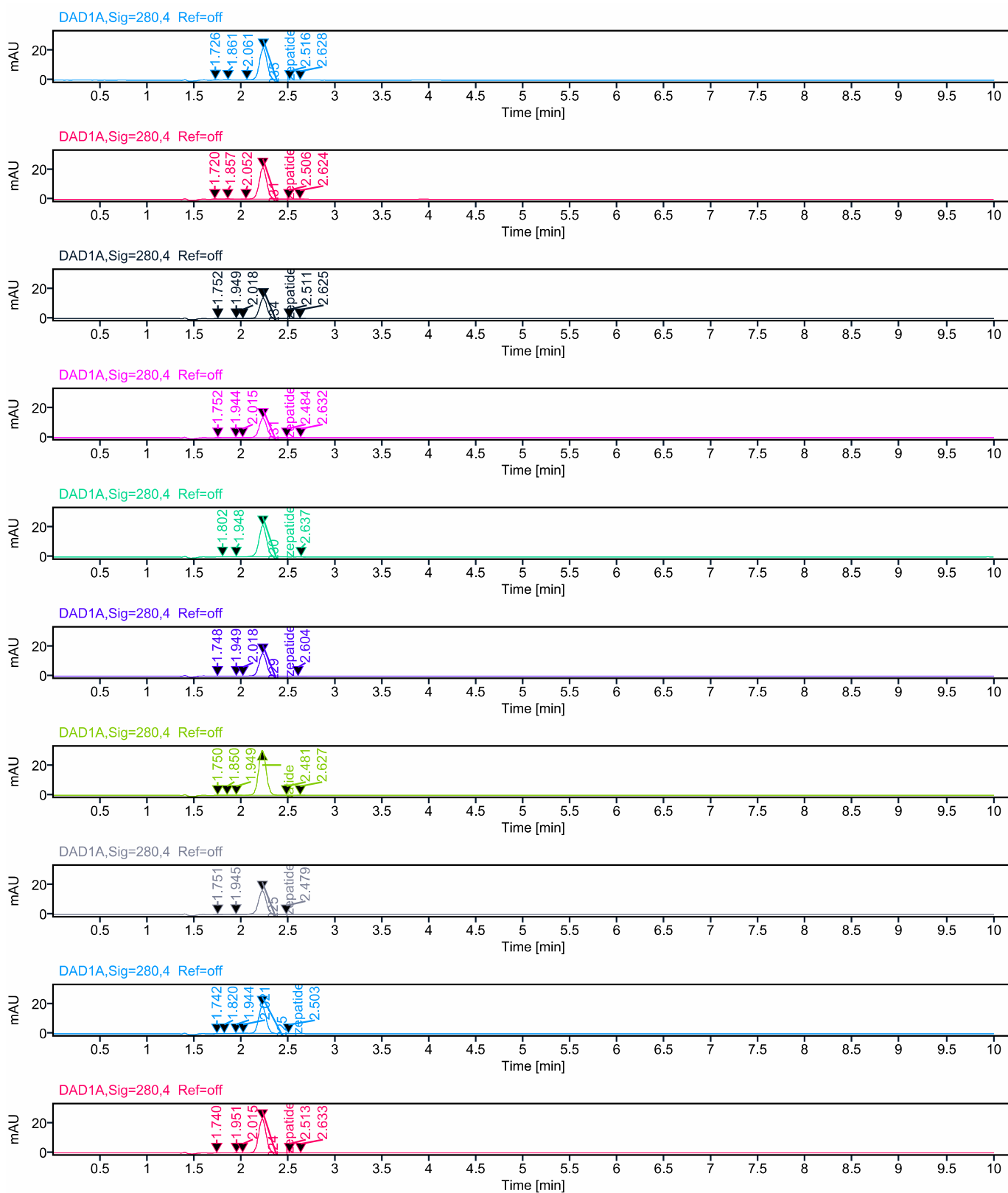


Compound Spectra Confirm Result Confirmed

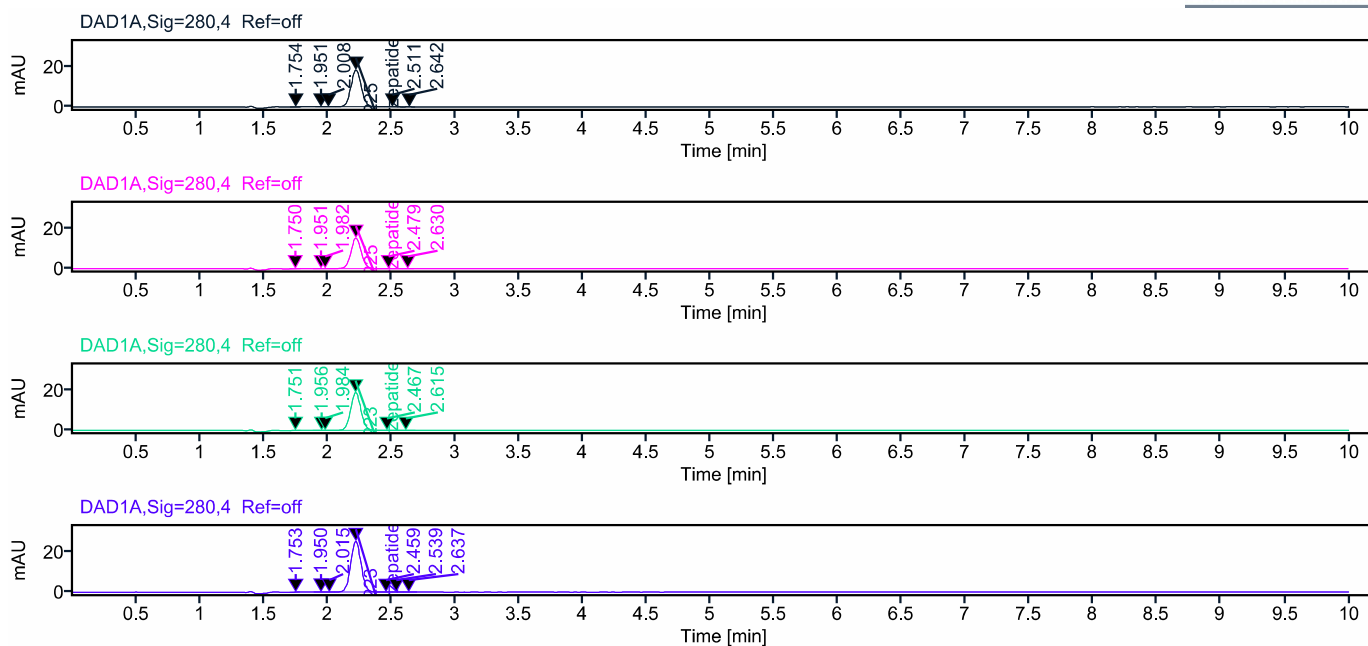
Sample Purity Report

Sequence Name 1001_aml_081624

Sequence Acquired Date 2024-08-16 18:28:55-04:00



Sample Purity Report



Sample Name	Name	RT	Area	Peak Area Percent
Sample ID 2408032 - 1		1.726	0.624	0.511
Sample ID 2408032 - 1		1.861	0.303	0.248
Sample ID 2408032 - 1		2.061	0.200	0.163
Sample ID 2408032 - 1	Tirzepatide	2.235	121.010	99.001
Sample ID 2408032 - 1		2.516	0.047	0.039
Sample ID 2408032 - 1		2.628	0.048	0.039
Sample ID 2408032 - 2		1.720	0.580	0.480
Sample ID 2408032 - 2		1.857	0.291	0.241
Sample ID 2408032 - 2		2.052	0.225	0.186
Sample ID 2408032 - 2	Tirzepatide	2.231	119.562	98.953
Sample ID 2408032 - 2		2.506	0.134	0.111
Sample ID 2408032 - 2		2.624	0.035	0.029
Sample ID 2408033 - 1		1.752	0.090	0.117
Sample ID 2408033 - 1		1.949	0.047	0.061
Sample ID 2408033 - 1		2.018	0.031	0.041
Sample ID 2408033 - 1	Tirzepatide	2.234	76.793	99.574
Sample ID 2408033 - 1		2.511	0.097	0.126
Sample ID 2408033 - 1		2.625	0.062	0.080

Sample Purity Report

Sample Name	Name	RT	Area	Peak Area Percent
Sample ID 2408033 - 2		1.752	0.117	0.158
Sample ID 2408033 - 2		1.944	0.020	0.027
Sample ID 2408033 - 2		2.015	0.018	0.025
Sample ID 2408033 - 2	Tirzepatide	2.231	73.695	99.671
Sample ID 2408033 - 2		2.484	0.054	0.073
Sample ID 2408033 - 2		2.632	0.034	0.046
Sample ID 2408035		1.802	0.345	0.282
Sample ID 2408035		1.948	0.117	0.096
Sample ID 2408035	Tirzepatide	2.230	121.785	99.575
Sample ID 2408035		2.637	0.058	0.048
Sample ID 2408037		1.748	0.095	0.111
Sample ID 2408037		1.949	0.104	0.122
Sample ID 2408037		2.018	0.075	0.087
Sample ID 2408037	Tirzepatide	2.229	85.154	99.552
Sample ID 2408037		2.604	0.109	0.128
Sample ID 2408038		1.750	0.108	0.063
Sample ID 2408038		1.850	0.177	0.104
Sample ID 2408038		1.949	0.106	0.062
Sample ID 2408038	Tirzepatide	2.225	169.925	99.713
Sample ID 2408038		2.481	0.031	0.018
Sample ID 2408038		2.627	0.068	0.040
Sample ID 2408039		1.751	0.163	0.176
Sample ID 2408039		1.945	0.091	0.098
Sample ID 2408039	Tirzepatide	2.225	92.331	99.661
Sample ID 2408039		2.479	0.060	0.065
Sample ID 2408040		1.742	0.136	0.128
Sample ID 2408040		1.820	0.224	0.212
Sample ID 2408040		1.944	0.270	0.256
Sample ID 2408040		2.021	0.488	0.462
Sample ID 2408040	Tirzepatide	2.225	104.320	98.802
Sample ID 2408040		2.503	0.147	0.139
Sample ID 2408041		1.740	0.112	0.088
Sample ID 2408041		1.951	0.106	0.083
Sample ID 2408041		2.015	0.060	0.047

Sample Purity Report

Sample Name	Name	RT	Area	Peak Area Percent
Sample ID 2408041	Tirzepatide	2.224	126.929	99.575
Sample ID 2408041		2.513	0.163	0.128
Sample ID 2408041		2.633	0.101	0.080
Sample ID 2408047		1.754	0.126	0.122
Sample ID 2408047		1.951	0.119	0.116
Sample ID 2408047		2.008	0.073	0.071
Sample ID 2408047	Tirzepatide	2.225	102.293	99.589
Sample ID 2408047		2.511	0.057	0.056
Sample ID 2408047		2.642	0.047	0.046
Sample ID 2408049		1.750	0.141	0.164
Sample ID 2408049		1.951	0.172	0.200
Sample ID 2408049		1.982	0.086	0.100
Sample ID 2408049	Tirzepatide	2.225	85.558	99.438
Sample ID 2408049		2.479	0.043	0.050
Sample ID 2408049		2.630	0.041	0.047
Sample ID 2408052		1.751	0.139	0.132
Sample ID 2408052		1.956	0.127	0.120
Sample ID 2408052		1.984	0.045	0.042
Sample ID 2408052	Tirzepatide	2.223	105.433	99.570
Sample ID 2408052		2.467	0.082	0.077
Sample ID 2408052		2.615	0.062	0.058
Sample ID 2408030		1.753	0.102	0.071
Sample ID 2408030		1.950	0.201	0.141
Sample ID 2408030		2.015	0.069	0.048
Sample ID 2408030	Tirzepatide	2.223	142.411	99.669
Sample ID 2408030		2.459	0.022	0.015
Sample ID 2408030		2.539	0.019	0.013
Sample ID 2408030		2.637	0.061	0.043