$^1$HNMR Spectrum of Stage-1
\(^{13}\)CNMR Spectrum of Stage-1
Mass spectrum of Stage-1
Method Log:
1: Equilibrate at 50.00°C
2: Ramp 10.00°C/min to 200.00°C
3: End of method

| Peak Integration |
|------------------|
| Start (°C) | Onset (°C) | Maximum (°C) | Stop (°C) | Area (J/g) |
| 168.00       | 166.00     | 167.86       | 173.76    | 90.97      |
HPLC Chromatogram of Stage-1

Sample Information

Sample Name: 0265/C01/E00502/005
Sample Type: Unknown
Visit: 26
Injection #: 1
Injection Volume: 10.00 ul
Sample Set Id 1709
Sample Set Name: 300116_INT_073
Project Name: HYD1_AD-Generics/0265 Jan 2016
Result Id 1765 Result Set Id

Instrument Method Id 1663
Acquired By: divyakumarteam
Date Acquired: 1/30/2016 7:39:06 PM IST
Date Processed: 2/3/2016 8:47:17 AM IST
Processing Method: 0265_Pro
Processing Method Id 1761
Proc. Chnl. Descr.: W2489 ChA 245nm
System Name: LL_AD_LC_073
Software: Empower 3 Software Build 3471

Peak Results

| Name            | RT  | Area  | % Area |
|-----------------|-----|-------|--------|
| Nitrobenzoe acid| 3.53| 13417 | 0.0517 |
| RRT 0.096       | 15.53| 1195  | 0.0046 |
| C01             | 29.74| 2968749 | 99.6398 |
| RRT 1.142       | 33.96| 14432 | 0.0555 |
| RRT 1.247       | 37.07| 10115 | 0.0390 |
| RRT 1.344       | 39.96| 1315  | 0.0051 |
| RRT 1.488       | 44.26| 1913  | 0.0074 |

SampleName 0265/C01/E00502/005
Date Acquired 1/30/2016 7:39:06 PM IST
"1HNMR Spectrum of Stage-2"
$^{13}$CNMR Spectrum of Stage-2
Mass Spectrum of Stage-2
DSC Thermogram of Stage-2

Method Log:
1: Equilibrate at 50.00°C
2: Ramp 10.00°C/min to 200.00°C
3: End of method

Peak Integration

| Start  | Onset | Maximum | Stop  | Area  |
|--------|-------|---------|-------|-------|
| °C     | °C    | °C      | °C    | J/g   |
| 106.16 | 110.89| 112.56  | 119.20| 134.6 |

ELN
HPLC Chromatogram of Stage-2

Analytical Development

SAMPLE INFORMATION

Sample Name: 0265/C02/E000541/164
Sample Type: Unknown
Vial: 20
Injection #: 1
Injection Volume: 10.00 ul
Run Time: 60.0 Minutes
Sample Set Name: 0265_C01_60Min_160716
Sample Set ID: 3827
Project Name: HYD1_AD-General&0265_JULY
Result Id 3761
Result Set Id

Method Id: ****
Acquired By: Anjaneyulu.som
Date Acquired: 07/16/2016 19:16:55 IST
Date Processed: 07/16/2016 20:52:57 IST
Processing Method 0255 PRoc
Processing Method Id 3744
Proc. Chnl. Descr.: Detector A 247nm
System Name: AI_AD_LC_39_142
Em empower 3 Software Build 3471 SPS Installed:
Feature Release 2 DB ID: 2487711617

Auto-Scaled Chromatogram

Peak Results

| Name   | RT  | Area | % Area | RT Ratio |
|--------|-----|------|--------|----------|
| Peak02 | 21.79 | 4115 | 0.02 | 0.71 |
| Peak03 | 24.01 | 6523 | 0.04 | 0.78 |
| Peak04 | 29.54 | 7898 | 0.01 | 0.93 |
| Peak05 | 29.43 | 2597 | 0.02 | 0.96 |
| CO2    | 30.78 | 1500228 | 98.91 | 1.00 |
| Peak06 | 33.46 | 1450 | 0.01 | 1.06 |
| Peak07 | 33.75 | 2698 | 0.02 | 1.10 |
| Peak08 | 34.46 | 1241 | 0.01 | 1.12 |
| Peak09 | 36.50 | 120470 | 0.70 | 1.20 |
| Peak10 | 39.00 | 3690 | 0.02 | 1.29 |
| Peak11 | 43.24 | 8144 | 0.04 | 1.41 |
| Peak12 | 43.55 | 5579 | 0.03 | 1.43 |
| Peak13 | 45.90 | 1470 | 0.01 | 1.49 |
| Peak14 | 58.08 | 11373 | 0.07 | 1.63 |
| Peak15 | 51.59 | 10354 | 0.11 | 1.68 |

Sample Name: 0265/C02/E000541/164
Date Acquired: 07/16/2016 19:16:55 IST

Signature / Date

Page: 1 of 1
$^1$HNMR Spectrum of Stage-3
$^{13}$CNMR Spectrum of Stage-3
Mass Spectrum of Stage-3
DSC Thermogram of Stage-3

Method Log:
1: Equilibrate at 50.00°C
2: Ramp 10.00°C/min to 200.00°C
3: End of method

Peak Integration

| Start | Onset | Maximum | Stop | Area |
|-------|-------|---------|------|------|
| °C    | °C    | °C      | °C   | g    |
| 151.74| 165.10| 167.46  | 175.46| 117.3|

ELN
HPLC Chromatogram of Stage-3
(Chemical purity)

Analytical Development

SAMPLE INFORMATION
Sample Name: 0265/C03/E00502/169
Sample Type: Unknown
Vial: 12
Injection #: 1
Injection Volume: 10.00 ul
Run Time: 60.0 Minutes
Sample Set Name: 0265_C04_60Min_200716
Sample Set ID: 4935
Project Name: HYD1_AD-Geneics0265_JULY
Result Id: 5014
Result Set Id

Method Id ****
Acquired By: Anjaneyulu team
Date Acquired: 07/20/2016 11:43:07 IST
Date Processed: 07/20/2016 13:22:23 IST
Processing Method: 0265 PProc17
Processing Method Id: 5054
Proc Chnl, Dector: Detector A 245nm
System Name: LL_AD_LL_C_65_176
Empower 3 Software Build: 3471 SPs Installed:
Feature Release 2 DB ID: 2487716117

Auto-Scaled Chromatogram

Peak Results

| Name | RT  | Area | % Area | RT Ratio |
|------|-----|------|--------|----------|
| 1    | Peak2 | 7.54 | 1719   | 0.01     | 0.39     |
| 2    | Peak3 | 13.75 | 19152  | 0.09     | 0.47     |
| 3    | Peak4 | 22.22 | 748    | 0.00     | 0.77     |
| 4    | Peak5 | 24.38 | 1885   | 0.01     | 0.84     |
| 5    | Peak6 | 26.00 | 3451   | 0.02     | 0.93     |
| 6    | Peak7 | 25.45 | 9597   | 0.06     | 0.98     |
| 7    | C03  | 20.00 | 109079 | 66.81    | 1.00     |
| 8    | Peak8 | 34.65 | 817    | 0.00     | 1.19     |

Sample Name: 0265/C03/E00502/169
Date Acquired: 07/20/2016 11:43:07 IST

Signature / Date

Page: 1 of 1
HPLC Chromatogram of Stage-3 (Chiral purity)

**Sample Information**
- **Sample Name:** 0265C03/E00502/1769
- **Sample Type:** Unknown
- **Vial:** 51
- **Injection #:** 1
- **Injection Volume:** 20.00 μl
- **Run Time:** 40.0 Minutes
- **Sample Set Name:** 0265_C03 chiral_L75_200716
- **Sample Set ID:** 2670
- **Project Name:** HYD1_AD-General/0265_July_
- **Result Id:** 2687
- **Result Set Id:**

**Method Information**
- **Method Id:**
- **Acquired By:** divyalumateam
- **Date Acquired:** 07/20/2016 20:14:39 IST
- **Date Processed:** 07/21/2016 8:42:26 IST
- **Processing Method:** 0265_C03 Rev chiral pro
- **Processing Method Id:** 2682
- **Proc. Chnl. Descr.:** W2489 CHA 245nm
- **System Name:** LL_AD_LL_075
- **Empower 3 Software Build:** 3471 SPs Installed:
- **Feature Release 2 DB ID:** 2487711617

**Auto-Scaled Chromatogram**

**Peak Results**

| Name      | RT  | Area | % Area | RT Ratio | USP Resolution | USP Plate Count | USP Tailing |
|-----------|-----|------|--------|----------|----------------|-----------------|-------------|
| 1 Isomer  | 17.621 | 3050 | 0.020  | 0.030    | 419.44         | 1.0             | 2.0         |
| 2 Isotop C03 | 21.239 | 3854856 | 99.991 |          |                | 1973.9         | 2.0         |

**Sample Name:** 0265/C03/E00502/169
**Date Acquired:** 07/20/2016 20:14:39 IST
**Signature / Date**
$^{1} \text{HNMR Spectrum of stage-4}$
Mass Spectrum of stage-4
DSC Thermogram of stage-4

Method Log:
1: Equilibrate at 50.00°C
2: Ramp 10.00°C/min to 200.00°C
3: End of method

Peak Integration

| Start °C | Onset °C | Maximum °C | Stop °C | Area J/g |
|---------|---------|------------|--------|---------|
| 118.79  | 131.38  | 141.36     | 151.56 | 62.12   |
| 159.97  | 162.33  | 167.05     | 173.22 | 2.002   |

ELN
$^1$HNMR Spectrum of stage-5/ Idelalisib
$^{13}$CNMR Spectrum of stage-5/ Idelalisib
Mass Spectrum of stage-5/ Idelalisib
Method Log:
1: Equilibrate at 50.00°C
2: Ramp 10.00°C/min to 300.00°C
3: End of method

Peak Integration

| Start (°C) | Onset (°C) | Maximum (°C) | Stop (°C) | Area (J/g) |
|------------|------------|--------------|-----------|------------|
| 247.21     | 254.88     | 256.45       | 259.85    | 96.20      |
HPLC Chromatogram of stage-5/ Idelalisib
(Chemical purity)

Sample Information

Sample Name: 0265/C05/E00502/149
Sample Type: Unknown
Vial: 2/3
Injection #: 1
Injection Volume: 10.00 ul
Run Time: 80.0 Minutes
Sample Set Name: 0265_C05_80Min_020716
Sample Set ID: 1236
Project Name: HYD1_AD-Generic0265_JULY
Result Id 1274 Result Set Id

Method Id ****
Acquired By: Anjanyuluteam
Date Acquired: 07/02/2016 12:36:03 IST
Date Processed: 07/02/2016 14:15:50 IST
Processing Method: 0265_PRo1
Processing Method Id: 1262
Proc. Chnl. Descr.: Detector A 268nm
System Name: LL_AD_LG_56_177
Empower 3 Software Build: 3471 SPs Installed:
Feature Release 2 DB ID: 2487711617

Auto-Scaled Chromatogram

Peak Results

| Name     | RT   | Area   | % Area | RT Ratio |
|----------|------|--------|--------|----------|
| Peak1    | 2.45 | 8015   | 0.02   | 0.06     |
| Peak2    | 2.91 | 2632   | 0.01   | 0.00     |
| Peak3    | 11.96| 7442   | 0.02   | 0.39     |
| Peak6    | 25.68| 13446  | 0.03   | 0.84     |
| C05      | 30.63| 540977R| 99.87  | 1.00     |
| Peak6    | 37.61| 2231   | 0.01   | 1.23     |
| Peak7    | 38.61| 5940   | 0.01   | 1.27     |
| Peak8    | 45.85| 4815   | 0.01   | 1.50     |
| Peak9    | 49.31| 9233   | 0.02   | 1.61     |
| Peak10   | 54.85| 2469   | 0.01   | 1.79     |

Signature / Date

Page: 1 of 1
HPLC Chromatogram of stage-5/ Idelalisib

(Chiral purity)

Analytical Development

Sample Information

- Sample Name: HYD1_AD-Generics/0265_July_2
- Sample Type: Unknown
- Vial: 1
- Injection #: 1
- Injection Volume: 10.00 ul
- Run Time: 40.0 Minutes
- Sample Set Name: 0265_C05_chiral
- Sample Set ID: 1007
- Project Name: HYD1_AD-Generics/0265_July_2
- Result Id: 1031

Method Information

- Method Id: ****
- Acquired By: divyakumarasam
- Date Acquired: 7/2/2016 11:00:00 AM IST
- Date Processed: 7/2/2016 2:30:27 PM IST
- Processing Method: 0265 C05 chiral pro
- Processing Method Id: 1024
- Proc. Chnl. Descr.: W2489 ChA 268nm
- System Name: LL_AD_LC_075
- Empower 3 Software Build: 3471 SPs Installed: Feature Release 2 DB ID: 2487711617

Auto-Scaled Chromatogram

Peak Results

| Name   | RT  | Area | % Area | RT Ratio |
|--------|-----|------|--------|----------|
| 1      | 15.767 | 148222 | 99.991 |          |
| 2      | 17.317 | 5666  | 0.009  |          |