

## LAMPIRAN

### Lampiran 1. Surat Hasil Determinasi

  
UNIVERSITAS GADJAH MADA  
FAKULTAS BIOLOGI  
LABORATORIUM SISTEMATIKA TUMBUHAN  
Jalan Tekniko Selatan Sekeloa Utara Yogyakarta 55281 Telpun (0274) 6492652/6492272; Fax: (0274) 6580839

---

**SURAT KETERANGAN**  
Nomor : 03363/ S.Tb. /VI/ 2018

Yang bertanda tangan dibawah ini, Kepala Laboratorium Sistematika Tumbuhan Fakultas Biologi UGM, menerangkan dengan sesungguhnya bahwa,

|               |                                  |
|---------------|----------------------------------|
| Nama          | : Arman Suryani                  |
| NIM           | : 14613141                       |
| Asal instansi | : Fakultas MIPA – UII Yogyakarta |

telah melakukan identifikasi tumbuhan dengan hasil sebagai berikut,

|            |   |
|------------|---|
| Kingdom    | : Plantae                                   |
| Divisio    | : Tracheophyta                              |
| Class      | : Magnoliopsida                             |
| Ordo       | : Arecales                                  |
| Familia    | : Arecaceae                                 |
| Genus      | : Salacca                                   |
| Spesies    | : <i>Salacca zalacca</i> cv. (Gaerth.) Vos. |
| Sinonim    | : <i>Salacca edulis</i> Reinw.              |
| Nama lokal | : Salak                                     |

identifikasi tersebut dibantu oleh Abdul Razaq Chasani, S.Si., M.Si.  
Demikian surat keterangan ini diberikan untuk dapat dipergunakan seperlunya.

|   |  |
|---|--|
| Mengetahui,<br>Dekan Fakultas Biologi<br>Universitas Gadjah Mada<br><br>Dr. Budi Setyadi Daryono, M.Agr.Sc.<br>NIP. 197003261995121001 | Yogyakarta, 5 Juni 2018<br>Kepala Laboratorium<br>Sistematika Tumbuhan<br>Fakultas Biologi UGM<br><br>Dr. Purnomo, M.S.<br>NIP. 195504211982031005 |
|---|--|

**Lampiran 2.** Surat Hasil Uji Kromatografi Lapis Tipis



**UNIVERSITAS GADJAH MADA**  
LABORATORIUM PENELITIAN DAN PENGUJIAN TERPADU

RDPIS.10.01/LPPT  
Rev. 1  
Halaman 1 dari 1

**LAPORAN HASIL UJI**  
No. Sertifikat : 01099.01/VV/UN1/LPPT/2018  
No. Pengujian : 18050101099

**Informasi Customer**

|  |                                  |
|--|----------------------------------|
| Nama : Arman Suryani                       | Tanggal Penerimaan : 28 Mei 2018 |
| Alamat : Jurusan Farmasi Fakultas MIPA UII | Tanggal Pengujian : 30 Mei 2018  |

**Hasil Pengujian**

Ekstrak Kulit Salak

| Parameter Uji | Hasil   | Satuan | Metode |
|---------------|---------|--------|--------|
| Flavonoid     | Positif | -      | KLT    |

Yogyakarta, 26 Juni 2018  
Pejabat Penandatanganan Sertifikat,



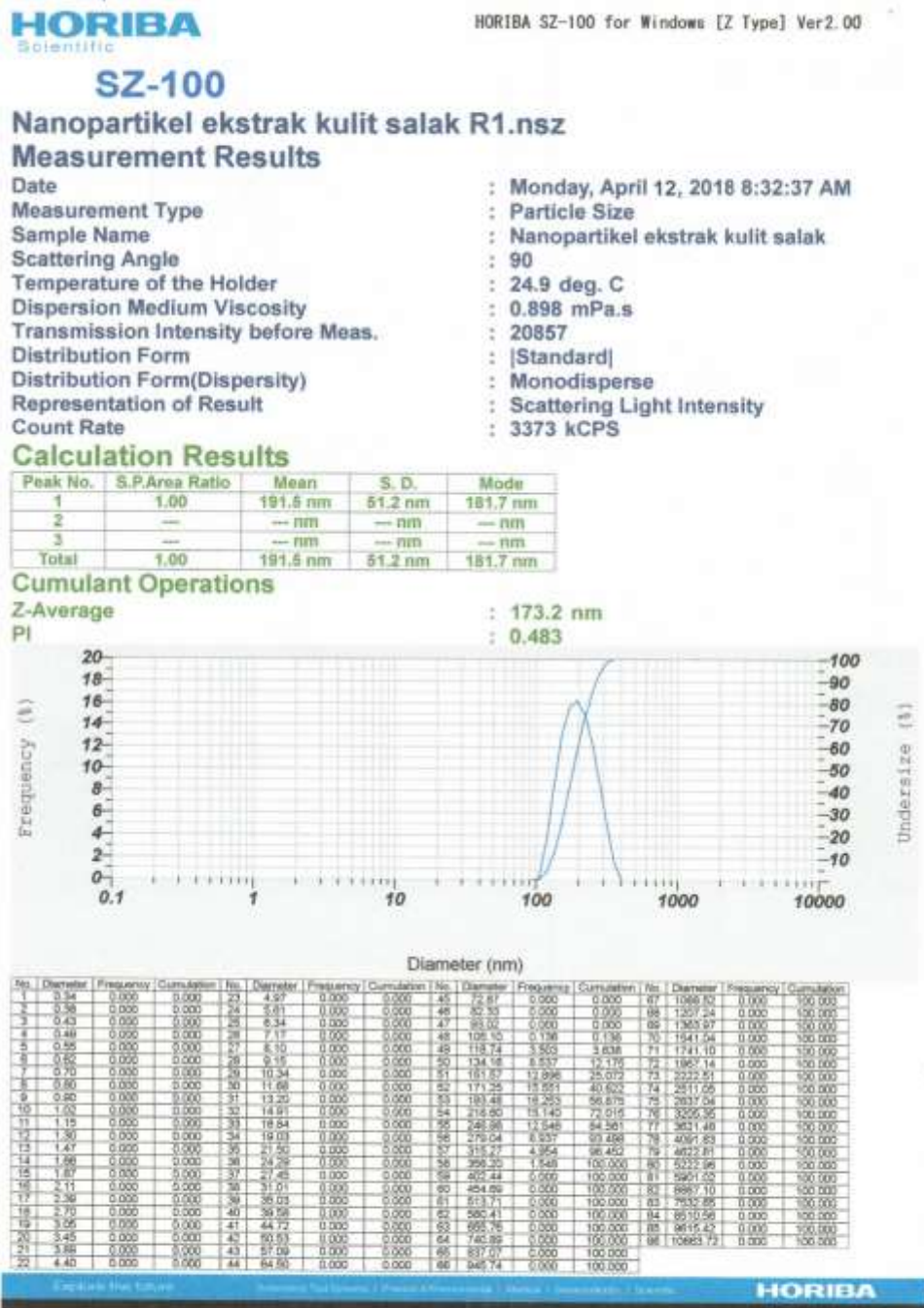
Triwahyudi, S. Kom.

**Petatan :**

1. LNU ini berlaku hanya pada sampel yang diujikan.
2. LNU ini dibuat secara real-time untuk penggunaan pelanggan yang disebutkan dalam LNU ini.
3. LPPT tidak bertanggung jawab atas setiap kerusakan, kerusakan atau tanggung jawab hukum yang dimiliki oleh pihak ketiga sebagai akibat dari kepercayaan terhadap atau penggunaan laporan ini.
4. Tidak diperkenankan menggunakan LNU ini tanpa izin dari LPPT UGM.

**Lampiran 3.** Lembar Hasil Pemeriksaan Ukuran Partikel dan *Polydispersity Index*  
Nanopartikel PLGA Ekstrak Kulit Buah Salak

**Replikasi 1.**



Replikasi 2.



HORIBA SZ-100 for Windows [Z Type] Ver2.00

**SZ-100**

**Nanopartikel ekstrak kulit salak R2.nsz**

**Measurement Results**

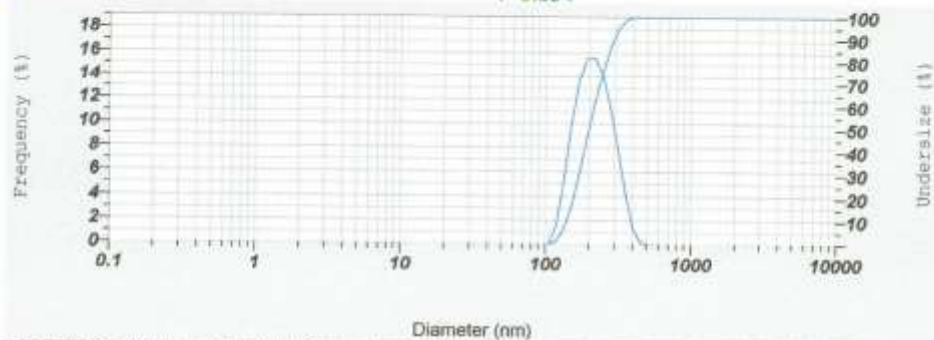
Date : Thursday, April 12, 2018 8:36:35 AM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel ekstrak kulit salak  
 Scattering Angle : 90  
 Temperature of the Holder : 24.9 deg. C  
 Dispersion Medium Viscosity : 0.897 mPa.s  
 Transmission Intensity before Meas. : 19110  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 3411 kCPS

**Calculation Results**

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 209.1 nm | 58.6 nm | 204.4 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 209.1 nm | 58.6 nm | 204.4 nm |

**Cumulat Operations**

Z-Average : 178.5 nm  
 PI : 0.394



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 72.87    | 0.000     | 0.000      | 67  | 1088.52  | 0.000     | 100.000    |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 82.33    | 0.000     | 0.000      | 68  | 1207.24  | 0.000     | 100.000    |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 93.02    | 0.000     | 0.000      | 69  | 1363.87  | 0.000     | 100.000    |
| 4   | 0.49     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 105.10   | 0.000     | 0.000      | 70  | 1541.04  | 0.000     | 100.000    |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 118.74   | 0.000     | 0.000      | 71  | 1741.10  | 0.000     | 100.000    |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 134.18   | 0.000     | 0.000      | 72  | 1967.14  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.57   | 0.000     | 0.000      | 73  | 2222.81  | 0.000     | 100.000    |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.68    | 0.000     | 0.000      | 52  | 171.25   | 0.000     | 0.000      | 74  | 2511.08  | 0.000     | 100.000    |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.48   | 0.000     | 0.000      | 75  | 2837.04  | 0.000     | 100.000    |
| 10  | 1.02     | 0.000     | 0.000      | 32  | 14.91    | 0.000     | 0.000      | 54  | 218.60   | 0.000     | 0.000      | 76  | 3205.35  | 0.000     | 100.000    |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 246.98   | 0.000     | 0.000      | 77  | 3621.48  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.02    | 0.000     | 0.000      | 56  | 279.04   | 0.000     | 0.000      | 78  | 4091.83  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 315.27   | 0.000     | 0.000      | 79  | 4632.81  | 0.000     | 100.000    |
| 14  | 1.66     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 356.20   | 0.000     | 0.000      | 80  | 5252.88  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.45    | 0.000     | 0.000      | 59  | 402.44   | 0.000     | 0.000      | 81  | 5961.02  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.01    | 0.000     | 0.000      | 60  | 454.88   | 0.116     | 100.000    | 82  | 6768.10  | 0.000     | 100.000    |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.03    | 0.000     | 0.000      | 61  | 513.71   | 0.000     | 100.000    | 83  | 7692.88  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.58    | 0.000     | 0.000      | 62  | 579.41   | 0.000     | 100.000    | 84  | 8751.58  | 0.000     | 100.000    |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.72    | 0.000     | 0.000      | 63  | 652.76   | 0.000     | 100.000    | 85  | 9951.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.53    | 0.000     | 0.000      | 64  | 734.88   | 0.000     | 100.000    | 86  | 11303.72 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.08    | 0.000     | 0.000      | 65  | 827.07   | 0.000     | 100.000    |     |          |           |            |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 945.74   | 0.000     | 100.000    |     |          |           |            |

Replikasi 3.



HORIBA SZ-100 for Windows [Z Type] Ver2.00

**SZ-100**

**Nanopartikel ekstrak kulit salak.nsz**

**Measurement Results**

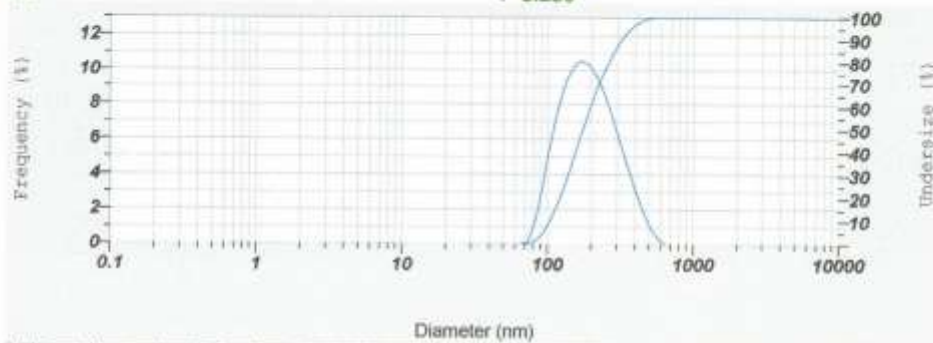
Date : Thursday, April 12, 2018 8:33:43 AM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel ekstrak kulit salak  
 Scattering Angle : 90  
 Temperature of the Holder : 24.8 deg. C  
 Dispersion Medium Viscosity : 0.898 mPa.s  
 Transmission Intensity before Meas. : 20857  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 3319 kCPS

**Calculation Results**

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 195.6 nm | 86.6 nm | 161.2 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 195.6 nm | 86.6 nm | 161.2 nm |

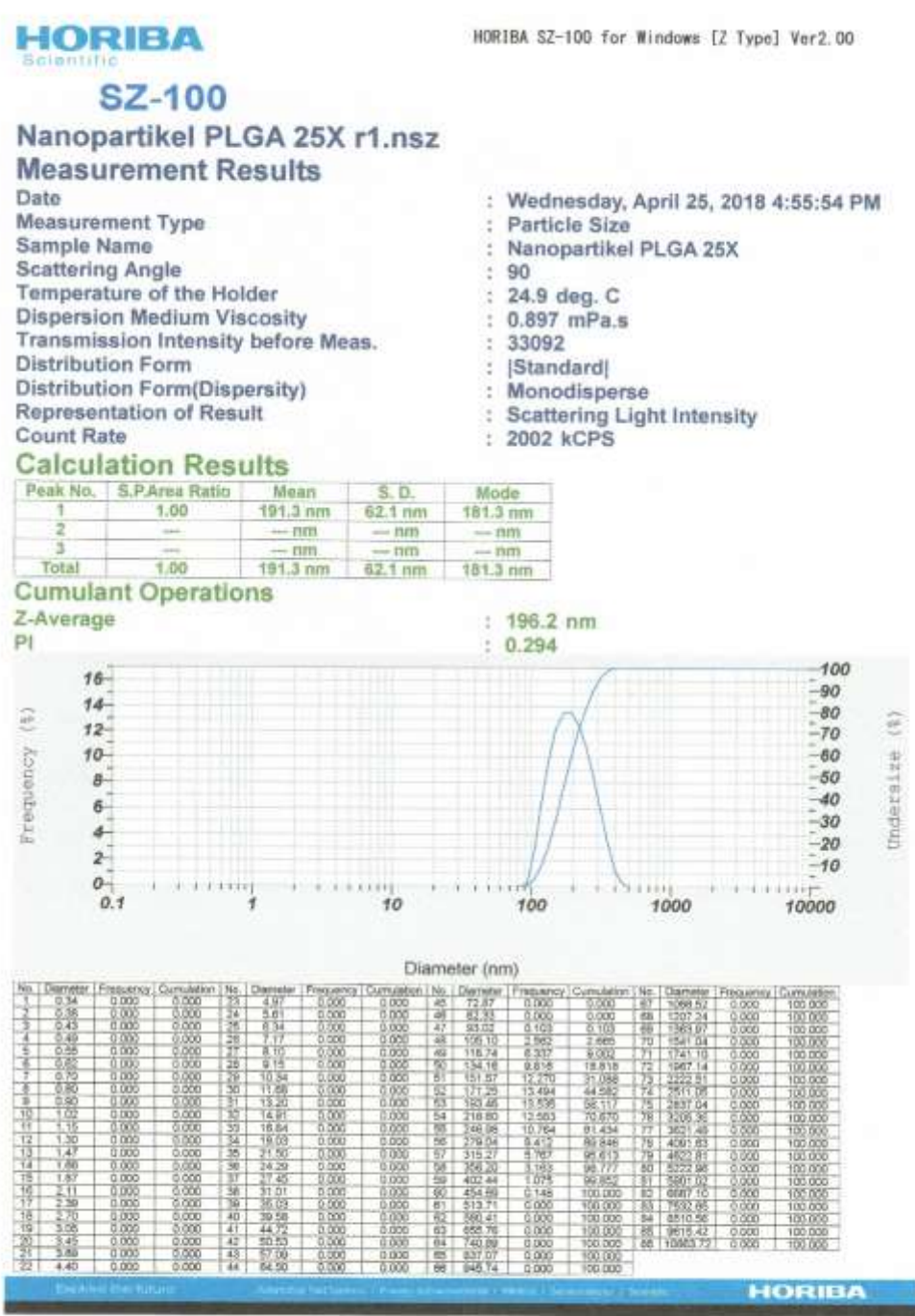
**Cumulat Operations**

Z-Average : 173.0 nm  
 P1 : 0.250



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 72.57    | 0.111     | 0.111      | 67  | 1066.82  | 0.000     | 100.000    |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.51     | 0.000     | 0.000      | 46  | 82.33    | 1.281     | 1.281      | 68  | 1207.24  | 0.000     | 100.000    |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.04     | 0.000     | 0.000      | 47  | 93.59    | 3.467     | 4.748      | 69  | 1363.97  | 0.000     | 100.000    |
| 4   | 0.48     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 102.10   | 8.706     | 13.414     | 70  | 1541.84  | 0.000     | 100.000    |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 118.74   | 7.756     | 21.170     | 71  | 1741.10  | 0.000     | 100.000    |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 134.16   | 9.271     | 30.441     | 72  | 1967.14  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.57   | 10.205    | 40.646     | 73  | 2222.51  | 0.000     | 100.000    |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.66    | 0.000     | 0.000      | 52  | 171.20   | 10.508    | 51.154     | 74  | 2511.05  | 0.000     | 100.000    |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.48   | 12.225    | 63.379     | 75  | 2837.14  | 0.000     | 100.000    |
| 10  | 1.00     | 0.000     | 0.000      | 32  | 14.97    | 0.000     | 0.000      | 54  | 219.60   | 9.579     | 72.958     | 76  | 3206.35  | 0.000     | 100.000    |
| 11  | 1.10     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 246.98   | 8.504     | 81.462     | 77  | 3621.48  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.03    | 0.000     | 0.000      | 56  | 279.04   | 7.504     | 88.966     | 78  | 4081.83  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 315.27   | 5.785     | 94.751     | 79  | 4622.51  | 0.000     | 100.000    |
| 14  | 1.65     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 359.50   | 4.362     | 99.113     | 80  | 5222.56  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.46    | 0.000     | 0.000      | 59  | 402.44   | 3.029     | 102.142    | 81  | 5897.52  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.01    | 0.000     | 0.000      | 60  | 454.86   | 1.844     | 103.986    | 82  | 6647.10  | 0.000     | 100.000    |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.03    | 0.000     | 0.000      | 61  | 513.71   | 0.950     | 104.936    | 83  | 7452.45  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.58    | 0.000     | 0.000      | 62  | 580.41   | 0.759     | 105.695    | 84  | 8317.58  | 0.000     | 100.000    |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.75    | 0.000     | 0.000      | 63  | 659.75   | 0.600     | 106.295    | 85  | 9242.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.63    | 0.000     | 0.000      | 64  | 740.89   | 0.460     | 106.755    | 86  | 10226.72 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.26    | 0.000     | 0.000      | 65  | 833.07   | 0.330     | 107.085    | 87  | 11270.00 | 0.000     | 100.000    |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 946.74   | 0.200     | 107.285    | 88  | 12372.00 | 0.000     | 100.000    |

**Lampiran 4.** Lembar Hasil Pemeriksaan Ukuran Partikel dan *Polydispersity Index*  
 Nanopartikel PLGA Ekstrak Kulit Buah Salak Uji Ketahanan  
 R1-25 Kali



R2-25 Kali



HORIBA SZ-100 for Windows [Z Type] Ver.2.00

SZ-100

Nanopartikel PLGA 25X R2.nsz  
Measurement Results

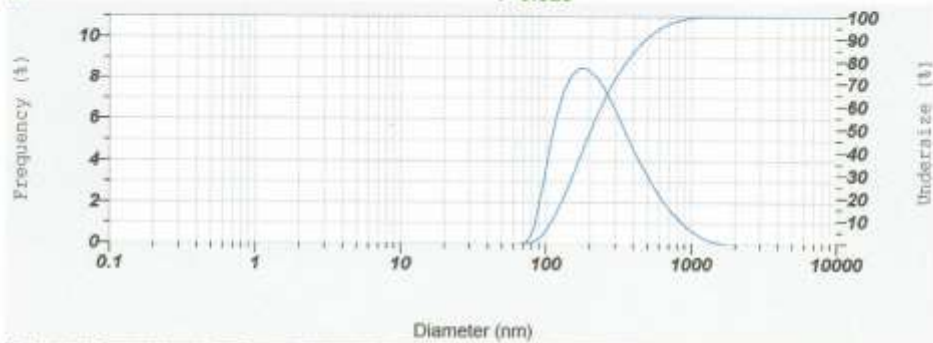
Date : Wednesday, April 25, 2018 4:55:18 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 25X  
 Scattering Angle : 90  
 Temperature of the Holder : 25.0 deg. C  
 Dispersion Medium Viscosity : 0.896 mPa.s  
 Transmission Intensity before Meas. : 33092  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 2085 kCPS

Calculation Results

| Peak No. | S.P.Area Ratio | Mean     | S. D.    | Mode     |
|----------|----------------|----------|----------|----------|
| 1        | 1.00           | 260.9 nm | 175.5 nm | 161.4 nm |
| 2        | ---            | --- nm   | --- nm   | --- nm   |
| 3        | ---            | --- nm   | --- nm   | --- nm   |
| Total    | 1.00           | 260.9 nm | 175.5 nm | 161.4 nm |

Cumulat Operations

Z-Average : 192.2 nm  
 PI : 0.323



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 72.87    | 0.000     | 0.000      | 67  | 1093.97  | 0.482     | 99.994     |
| 2   | 0.35     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 82.33    | 0.670     | 0.670      | 68  | 1207.24  | 0.269     | 99.992     |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 93.05    | 2.433     | 3.103      | 69  | 1365.67  | 0.114     | 99.998     |
| 4   | 0.48     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 104.10   | 4.410     | 7.513      | 70  | 1541.04  | 0.028     | 99.992     |
| 5   | 0.54     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 116.74   | 6.517     | 13.929     | 71  | 1741.10  | 0.000     | 99.992     |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 131.16   | 7.374     | 21.303     | 72  | 1967.14  | 0.000     | 99.992     |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 147.57   | 8.146     | 29.450     | 73  | 2222.61  | 0.000     | 99.992     |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.68    | 0.000     | 0.000      | 52  | 175.26   | 8.480     | 37.830     | 74  | 2511.88  | 0.000     | 99.992     |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 183.48   | 8.436     | 46.266     | 75  | 2837.04  | 0.000     | 99.992     |
| 10  | 1.02     | 0.000     | 0.000      | 32  | 14.91    | 0.000     | 0.000      | 54  | 218.80   | 8.097     | 54.363     | 76  | 3204.38  | 0.000     | 99.992     |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 246.88   | 7.546     | 61.910     | 77  | 3611.48  | 0.000     | 99.992     |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.03    | 0.000     | 0.000      | 56  | 279.04   | 6.856     | 68.766     | 78  | 4061.65  | 0.000     | 99.992     |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 313.27   | 6.089     | 74.855     | 79  | 4554.81  | 0.000     | 99.992     |
| 14  | 1.66     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 359.30   | 5.196     | 79.951     | 80  | 5093.96  | 0.000     | 99.992     |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.45    | 0.000     | 0.000      | 59  | 402.44   | 4.517     | 84.470     | 81  | 5681.02  | 0.000     | 99.992     |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.01    | 0.000     | 0.000      | 60  | 454.89   | 3.779     | 88.248     | 82  | 6317.10  | 0.000     | 99.992     |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.03    | 0.000     | 0.000      | 61  | 513.71   | 3.090     | 91.340     | 83  | 7002.65  | 0.000     | 99.992     |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.58    | 0.000     | 0.000      | 62  | 580.41   | 2.487     | 93.824     | 84  | 7740.56  | 0.000     | 99.992     |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.77    | 0.000     | 0.000      | 63  | 655.76   | 1.948     | 95.782     | 85  | 8535.42  | 0.000     | 99.992     |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.63    | 0.000     | 0.000      | 64  | 740.89   | 1.482     | 97.264     | 86  | 10385.72 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.29    | 0.000     | 0.000      | 65  | 837.07   | 1.085     | 98.349     |     |          |           |            |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.80    | 0.000     | 0.000      | 66  | 945.74   | 0.753     | 99.102     |     |          |           |            |

English File System

Horiba Scientific, Inc. 1-800-451-7777



R3-25 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

SZ-100

Nanopartikel PLGA 25X.nsz  
Measurement Results

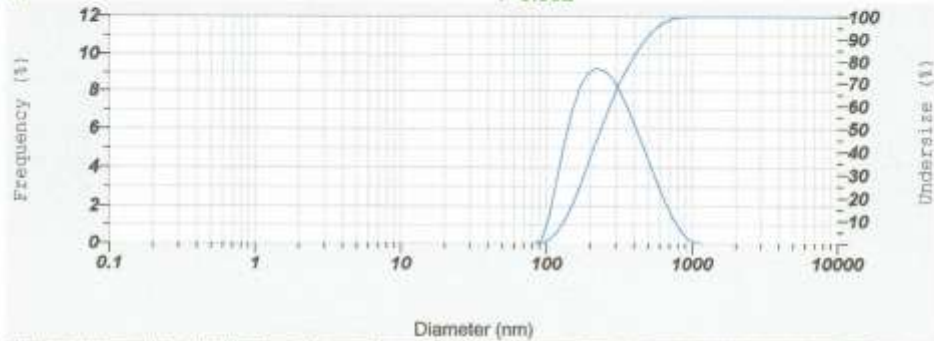
Date : Wednesday, April 25, 2018 5:01:04 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 25X  
 Scattering Angle : 90  
 Temperature of the Holder : 25.0 deg. C  
 Dispersion Medium Viscosity : 0.896 mPa.s  
 Transmission Intensity before Meas. : 33360  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 2353 kCPS

Calculation Results

| Peak No. | S.P.Area Ratio | Mean     | S. D.    | Mode     |
|----------|----------------|----------|----------|----------|
| 1        | 1.00           | 275.9 nm | 142.1 nm | 205.9 nm |
| 2        | ---            | --- nm   | --- nm   | --- nm   |
| 3        | ---            | --- nm   | --- nm   | --- nm   |
| Total    | 1.00           | 275.9 nm | 142.1 nm | 205.9 nm |

Cumulant Operations

Z-Average : 195.5 nm  
 PI : 0.362



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 73.87    | 0.000     | 0.000      | 67  | 1095.52  | 0.021     | 100.000    |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 82.25    | 0.000     | 0.000      | 68  | 1201.24  | 0.000     | 100.000    |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.38     | 0.000     | 0.000      | 47  | 93.02    | 0.014     | 0.014      | 69  | 1363.97  | 0.000     | 100.000    |
| 4   | 0.49     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 105.10   | 1.448     | 1.462      | 70  | 1541.04  | 0.000     | 100.000    |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 118.74   | 3.382     | 4.844      | 71  | 1741.10  | 0.000     | 100.000    |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 134.16   | 5.347     | 10.191     | 72  | 1967.14  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.57   | 7.000     | 17.191     | 73  | 2222.51  | 0.000     | 100.000    |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.68    | 0.000     | 0.000      | 52  | 171.76   | 8.536     | 25.727     | 74  | 2511.26  | 0.000     | 100.000    |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 194.89   | 9.948     | 35.675     | 75  | 2837.04  | 0.000     | 100.000    |
| 10  | 1.00     | 0.000     | 0.000      | 32  | 14.95    | 0.000     | 0.000      | 54  | 218.80   | 12.238    | 47.913     | 76  | 3205.35  | 0.000     | 100.000    |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 246.98   | 14.130    | 62.043     | 77  | 3611.48  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 18.93    | 0.000     | 0.000      | 56  | 279.04   | 15.715    | 77.758     | 78  | 4061.53  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.30    | 0.000     | 0.000      | 57  | 315.27   | 17.041    | 94.799     | 79  | 4562.81  | 0.000     | 100.000    |
| 14  | 1.66     | 0.000     | 0.000      | 36  | 24.00    | 0.000     | 0.000      | 58  | 356.30   | 17.934    | 112.733    | 80  | 5121.96  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.05    | 0.000     | 0.000      | 59  | 402.44   | 18.312    | 131.045    | 81  | 5745.00  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 30.51    | 0.000     | 0.000      | 60  | 454.89   | 17.582    | 148.627    | 82  | 6438.10  | 0.000     | 100.000    |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.00    | 0.000     | 0.000      | 61  | 513.71   | 14.145    | 162.772    | 83  | 7203.85  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.58    | 0.000     | 0.000      | 62  | 580.41   | 11.141    | 173.913    | 84  | 8049.58  | 0.000     | 100.000    |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.72    | 0.000     | 0.000      | 63  | 655.78   | 7.354     | 181.267    | 85  | 8975.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.53    | 0.000     | 0.000      | 64  | 740.89   | 3.368     | 184.635    | 86  | 10083.72 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.08    | 0.000     | 0.000      | 65  | 837.07   | 0.875     | 185.510    |     |          |           |            |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 945.74   | 0.100     | 185.610    |     |          |           |            |

Express the Results

Sample Parameters | Measurement Conditions | Measurement Results | Reports





R1-50 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

SZ-100

Nanopartikel PLGA 50X R1.nsz  
Measurement Results

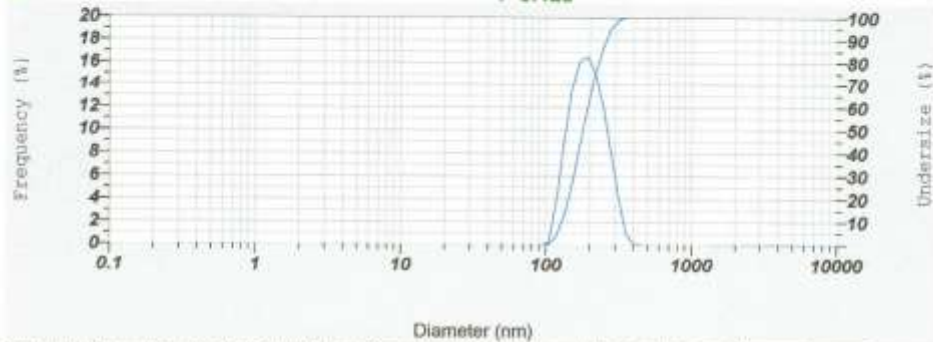
Date : Wednesday, April 25, 2018 4:44:34 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 50X  
 Scattering Angle : 90  
 Temperature of the Holder : 25.0 deg. C  
 Dispersion Medium Viscosity : 0.896 mPa.s  
 Transmission Intensity before Meas. : 34483  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 1482 kCPS

Calculation Results

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 187.8 nm | 49.4 nm | 181.3 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 187.8 nm | 49.4 nm | 181.3 nm |

Cumulat Operations

Z-Average : 177.3 nm  
 PI : 0.128



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.87     | 0.000     | 0.000      | 45  | 72.57    | 0.000     | 0.000      | 67  | 1069.52  | 0.000     | 100.000    |
| 2   | 0.58     | 0.000     | 0.000      | 24  | 5.81     | 0.000     | 0.000      | 46  | 82.33    | 0.000     | 0.000      | 68  | 1207.24  | 0.000     | 100.000    |
| 3   | 0.83     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 93.02    | 0.000     | 0.000      | 69  | 1361.97  | 0.000     | 100.000    |
| 4   | 0.99     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 105.10   | 0.000     | 0.000      | 70  | 1541.04  | 0.000     | 100.000    |
| 5   | 0.95     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 118.74   | 0.000     | 0.000      | 71  | 1741.50  | 0.000     | 100.000    |
| 6   | 0.82     | 0.000     | 0.000      | 28  | 9.13     | 0.000     | 0.000      | 50  | 134.16   | 0.000     | 0.000      | 72  | 1967.54  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.57   | 0.000     | 0.000      | 73  | 2222.51  | 0.000     | 100.000    |
| 8   | 0.60     | 0.000     | 0.000      | 30  | 11.66    | 0.000     | 0.000      | 52  | 171.36   | 0.000     | 0.000      | 74  | 2511.05  | 0.000     | 100.000    |
| 9   | 0.60     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.49   | 0.000     | 0.000      | 75  | 2837.04  | 0.000     | 100.000    |
| 10  | 1.02     | 0.000     | 0.000      | 32  | 14.87    | 0.000     | 0.000      | 54  | 218.80   | 0.000     | 0.000      | 76  | 3205.36  | 0.000     | 100.000    |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.64    | 0.000     | 0.000      | 55  | 246.99   | 0.000     | 0.000      | 77  | 3621.45  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 18.03    | 0.000     | 0.000      | 56  | 279.04   | 0.000     | 0.000      | 78  | 4081.63  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 19.67    | 0.000     | 0.000      | 57  | 313.27   | 0.000     | 0.000      | 79  | 4622.87  | 0.000     | 100.000    |
| 14  | 1.66     | 0.000     | 0.000      | 36  | 21.59    | 0.000     | 0.000      | 58  | 350.20   | 0.000     | 0.000      | 80  | 5222.96  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 23.80    | 0.000     | 0.000      | 59  | 390.44   | 0.000     | 0.000      | 81  | 5897.10  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 26.31    | 0.000     | 0.000      | 60  | 434.69   | 0.000     | 0.000      | 82  | 6647.10  | 0.000     | 100.000    |
| 17  | 2.38     | 0.000     | 0.000      | 39  | 29.03    | 0.000     | 0.000      | 61  | 483.71   | 0.000     | 0.000      | 83  | 7472.65  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 32.06    | 0.000     | 0.000      | 62  | 538.41   | 0.000     | 0.000      | 84  | 8372.96  | 0.000     | 100.000    |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 35.42    | 0.000     | 0.000      | 63  | 598.78   | 0.000     | 0.000      | 85  | 9445.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 39.03    | 0.000     | 0.000      | 64  | 664.89   | 0.000     | 0.000      | 86  | 10681.73 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 42.99    | 0.000     | 0.000      | 65  | 736.77   | 0.000     | 0.000      | 87  | 12081.73 | 0.000     | 100.000    |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 48.30    | 0.000     | 0.000      | 66  | 814.74   | 0.000     | 0.000      | 88  | 13645.74 | 0.000     | 100.000    |

Export Data File...



R2-50 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

**SZ-100**

**Nanopartikel PLGA 50X R2.nsz  
Measurement Results**

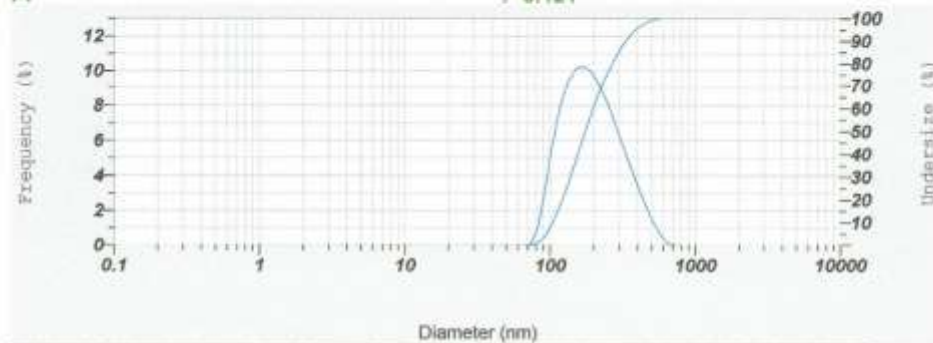
Date : Wednesday, April 25, 2018 4:43:59 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 50X  
 Scattering Angle : 90  
 Temperature of the Holder : 24.8 deg. C  
 Dispersion Medium Viscosity : 0.898 mPa.s  
 Transmission Intensity before Meas. : 34483  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 1232 kCPS

**Calculation Results**

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 199.4 nm | 92.6 nm | 160.9 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 199.4 nm | 92.6 nm | 160.9 nm |

**Cumulant Operations**

Z-Average : 177.5 nm  
 PI : 0.121



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 46  | 72.87    | 0.014     | 0.014      | 67  | 1068.82  | 0.000     | 100.000    |
| 2   | 0.36     | 0.000     | 0.000      | 24  | 5.01     | 0.000     | 0.000      | 48  | 82.23    | 1.026     | 1.041      | 68  | 1207.24  | 0.000     | 100.000    |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 5.34     | 0.000     | 0.000      | 47  | 83.22    | 3.267     | 4.428      | 69  | 1363.87  | 0.000     | 100.000    |
| 4   | 0.49     | 0.000     | 0.000      | 26  | 5.77     | 0.000     | 0.000      | 49  | 505.31   | 5.907     | 10.335     | 70  | 1541.04  | 0.000     | 100.000    |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 6.10     | 0.000     | 0.000      | 49  | 116.74   | 7.075     | 18.310     | 71  | 1741.10  | 0.000     | 100.000    |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 6.15     | 0.000     | 0.000      | 50  | 134.16   | 8.383     | 27.693     | 72  | 1987.14  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.57   | 10.117    | 37.810     | 73  | 2222.51  | 0.000     | 100.000    |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.56    | 0.000     | 0.000      | 52  | 171.25   | 17.249    | 48.059     | 74  | 2511.55  | 0.000     | 100.000    |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.48   | 9.688     | 57.947     | 75  | 2837.04  | 0.000     | 100.000    |
| 10  | 1.00     | 0.000     | 0.000      | 32  | 14.91    | 0.000     | 0.000      | 54  | 218.80   | 9.152     | 67.099     | 76  | 3205.32  | 0.000     | 100.000    |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.64    | 0.000     | 0.000      | 55  | 246.86   | 8.154     | 75.253     | 77  | 3621.48  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.03    | 0.000     | 0.000      | 56  | 279.04   | 6.995     | 82.250     | 78  | 4091.63  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 315.27   | 5.754     | 88.015     | 79  | 4622.81  | 0.000     | 100.000    |
| 14  | 1.66     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 366.20   | 4.526     | 92.940     | 80  | 5222.66  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.45    | 0.000     | 0.000      | 59  | 402.44   | 3.338     | 96.278     | 81  | 5901.02  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.01    | 0.000     | 0.000      | 60  | 454.69   | 2.245     | 98.523     | 82  | 6667.10  | 0.000     | 100.000    |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.03    | 0.000     | 0.000      | 61  | 513.71   | 1.289     | 99.812     | 83  | 7532.85  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.59    | 0.000     | 0.000      | 62  | 580.41   | 0.529     | 99.841     | 84  | 8510.58  | 0.000     | 100.000    |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.73    | 0.000     | 0.000      | 63  | 655.78   | 0.055     | 100.000    | 85  | 9615.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.53    | 0.000     | 0.000      | 64  | 740.69   | 0.000     | 100.000    | 86  | 10863.72 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.09    | 0.000     | 0.000      | 65  | 837.07   | 0.000     | 100.000    |     |          |           |            |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 946.74   | 0.000     | 100.000    |     |          |           |            |

R3-50 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

SZ-100

Nanopartikel PLGA 50X.nsz  
Measurement Results

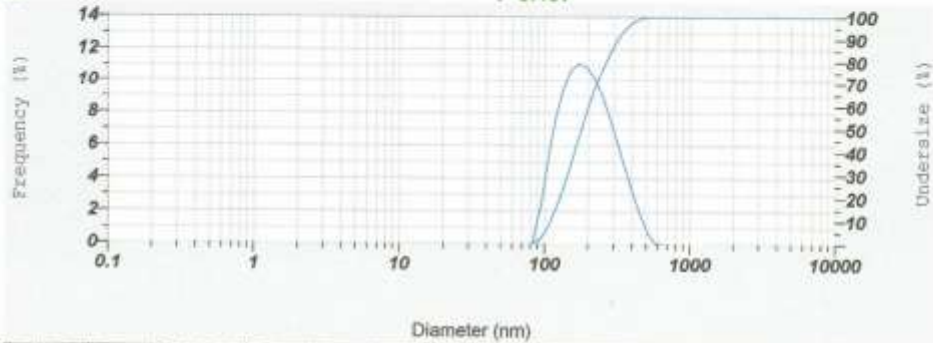
Date : Wednesday, April 25, 2018 4:47:31 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 50X  
 Scattering Angle : 90  
 Temperature of the Holder : 25.0 deg. C  
 Dispersion Medium Viscosity : 0.896 mPa.s  
 Transmission Intensity before Meas. : 34483  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 1240 kCPS

Calculation Results

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 199.1 nm | 81.9 nm | 161.3 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 199.1 nm | 81.9 nm | 161.3 nm |

Cumulat Operations

Z-Average : 173.3 nm  
 PI : 0.197



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 72.87    | 0.000     | 0.000      | 67  | 1088.52  | 0.000     | 100.000    |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 82.33    | 0.000     | 0.000      | 68  | 1207.24  | 0.000     | 100.000    |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 93.02    | 0.000     | 0.000      | 69  | 1363.97  | 0.000     | 100.000    |
| 4   | 0.49     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 105.10   | 4.875     | 6.915      | 70  | 1561.04  | 0.000     | 100.000    |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 118.74   | 7.485     | 14.400     | 71  | 1741.02  | 0.000     | 100.000    |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 134.16   | 9.446     | 23.845     | 72  | 1967.14  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.57   | 10.808    | 34.654     | 73  | 2222.51  | 0.000     | 100.000    |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.68    | 0.000     | 0.000      | 52  | 171.35   | 11.563    | 46.217     | 74  | 2511.06  | 0.000     | 100.000    |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.48   | 10.307    | 56.524     | 75  | 2831.04  | 0.000     | 100.000    |
| 10  | 1.00     | 0.000     | 0.000      | 32  | 14.91    | 0.000     | 0.000      | 54  | 218.60   | 10.201    | 66.725     | 76  | 3203.35  | 0.000     | 100.000    |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 246.86   | 8.105     | 75.750     | 77  | 3621.48  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.03    | 0.000     | 0.000      | 56  | 279.04   | 7.744     | 83.320     | 78  | 4091.53  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 315.27   | 8.225     | 89.752     | 79  | 4622.81  | 0.000     | 100.000    |
| 14  | 1.66     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 356.33   | 4.883     | 94.436     | 80  | 5222.56  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.45    | 0.000     | 0.000      | 59  | 402.44   | 1.138     | 97.563     | 81  | 5901.02  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.07    | 0.000     | 0.000      | 60  | 454.89   | 1.766     | 99.318     | 82  | 6667.10  | 0.000     | 100.000    |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.23    | 0.000     | 0.000      | 61  | 513.71   | 0.881     | 99.989     | 83  | 7522.65  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.98    | 0.000     | 0.000      | 62  | 580.41   | 0.021     | 100.000    | 84  | 8471.06  | 0.000     | 100.000    |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 45.37    | 0.000     | 0.000      | 63  | 655.18   | 0.005     | 100.000    | 85  | 9515.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 51.53    | 0.000     | 0.000      | 64  | 740.89   | 0.000     | 100.000    | 86  | 10663.72 | 0.000     | 100.000    |
| 21  | 3.90     | 0.000     | 0.000      | 43  | 57.08    | 0.000     | 0.000      | 65  | 837.07   | 0.000     | 100.000    |     |          |           |            |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 945.74   | 0.000     | 100.000    |     |          |           |            |

Customize the Filter...

Advanced Settings... Filter Histogram... Legend... Data Table... Settings...



R1-100 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

SZ-100

Nanopartikel PLGA 100X R1.nsz

Measurement Results

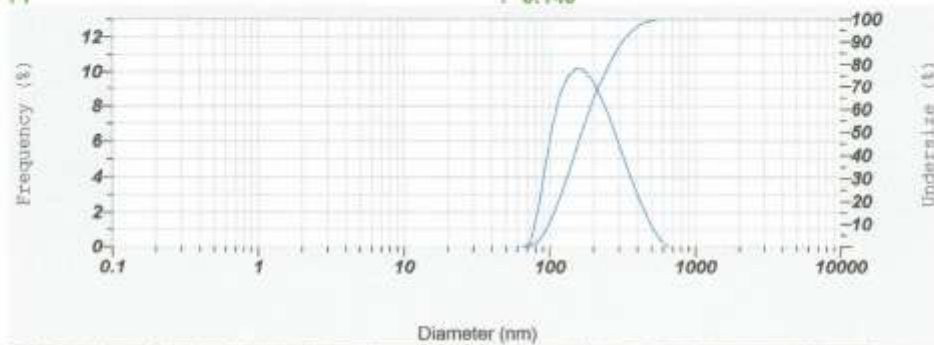
Date : Wednesday, April 25, 2018 4:35:24 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 100X  
 Scattering Angle : 90  
 Temperature of the Holder : 24.8 deg. C  
 Dispersion Medium Viscosity : 0.899 mPa.s  
 Transmission Intensity before Meas. : 34373  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 480 kCPS

Calculation Results

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 190.1 nm | 88.7 nm | 142.9 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 190.1 nm | 88.7 nm | 142.9 nm |

Cumulat Operations

Z-Average : 167.4 nm  
 PI : 0.149



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 46  | 72.27    | 0.161     | 0.161      | 67  | 1086.52  | 0.000     | 100.000    |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.51     | 0.000     | 0.000      | 48  | 82.33    | 1.874     | 2.175      | 68  | 1207.24  | 0.000     | 100.000    |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.04     | 0.000     | 0.000      | 47  | 93.52    | 4.503     | 6.637      | 69  | 1393.97  | 0.000     | 100.000    |
| 4   | 0.49     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 105.10   | 8.945     | 13.462     | 70  | 1541.09  | 0.000     | 100.000    |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 118.74   | 8.817     | 22.100     | 71  | 1741.10  | 0.000     | 100.000    |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 134.16   | 9.730     | 31.819     | 72  | 1967.14  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.57   | 10.184    | 42.003     | 73  | 2322.51  | 0.000     | 100.000    |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.69    | 0.000     | 0.000      | 52  | 171.25   | 10.190    | 52.103     | 74  | 2611.95  | 0.000     | 100.000    |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.45   | 9.980     | 61.883     | 75  | 2837.04  | 0.000     | 100.000    |
| 10  | 1.02     | 0.000     | 0.000      | 32  | 14.91    | 0.000     | 0.000      | 54  | 218.60   | 8.737     | 70.420     | 76  | 3256.56  | 0.000     | 100.000    |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 246.98   | 7.879     | 78.099     | 77  | 3821.48  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.03    | 0.000     | 0.000      | 56  | 279.04   | 6.496     | 84.594     | 78  | 4391.83  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 314.57   | 5.207     | 89.801     | 79  | 4922.81  | 0.000     | 100.000    |
| 14  | 1.65     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 353.30   | 4.023     | 93.824     | 80  | 5422.88  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.45    | 0.000     | 0.000      | 59  | 395.44   | 2.908     | 96.732     | 81  | 5897.02  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.01    | 0.000     | 0.000      | 60  | 454.69   | 1.967     | 98.687     | 82  | 6397.10  | 0.000     | 100.000    |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.03    | 0.000     | 0.000      | 61  | 513.71   | 1.284     | 99.971     | 83  | 7042.85  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.58    | 0.000     | 0.000      | 62  | 580.41   | 0.829     | 100.000    | 84  | 7910.58  | 0.000     | 100.000    |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.71    | 0.000     | 0.000      | 63  | 652.76   | 0.500     | 100.000    | 85  | 8815.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.53    | 0.000     | 0.000      | 64  | 730.88   | 0.260     | 100.000    | 86  | 9865.72  | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.09    | 0.000     | 0.000      | 65  | 815.07   | 0.130     | 100.000    |     |          |           |            |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 914.74   | 0.060     | 100.000    |     |          |           |            |

R2-100 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

SZ-100

Nanopartikel PLGA 100X R2.nsz  
Measurement Results

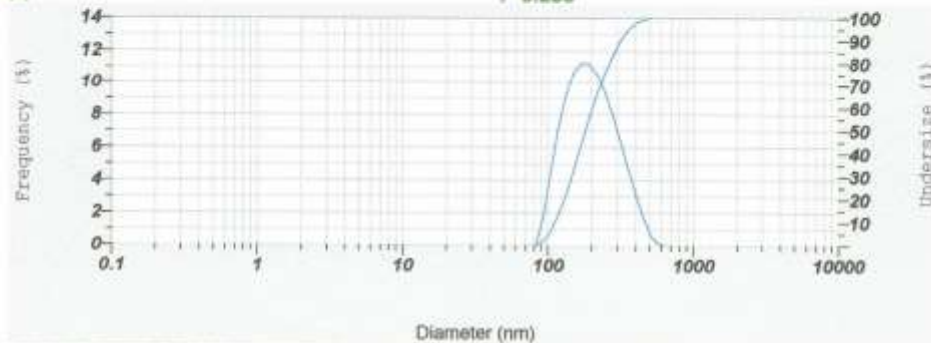
Date : Wednesday, April 25, 2018 4:34:49 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 100X  
 Scattering Angle : 90  
 Temperature of the Holder : 24.9 deg. C  
 Dispersion Medium Viscosity : 0.897 mPa.s  
 Transmission Intensity before Meas. : 34373  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 544 kCPS

Calculation Results

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 199.5 nm | 80.5 nm | 161.5 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 199.5 nm | 80.5 nm | 161.5 nm |

Cumulant Operations

Z-Average : 170.8 nm  
 PI : 0.253



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 72.87    | 0.000     | 0.000      | 67  | 1086.52  | 0.000     | 100.000    |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 82.53    | 0.000     | 0.000      | 68  | 1207.24  | 0.000     | 100.000    |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 93.02    | 1.754     | 1.754      | 69  | 1343.67  | 0.000     | 100.000    |
| 4   | 0.49     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 105.32   | 4.529     | 6.284      | 70  | 1497.54  | 0.000     | 100.000    |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 119.74   | 7.239     | 13.523     | 71  | 1741.10  | 0.000     | 100.000    |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 134.76   | 9.350     | 22.872     | 72  | 1987.14  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.87   | 10.859    | 33.731     | 73  | 2222.51  | 0.000     | 100.000    |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.68    | 0.000     | 0.000      | 52  | 171.26   | 11.290    | 45.020     | 74  | 2511.26  | 0.000     | 100.000    |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.48   | 11.146    | 56.166     | 75  | 2837.54  | 0.000     | 100.000    |
| 10  | 1.00     | 0.000     | 0.000      | 32  | 14.91    | 0.000     | 0.000      | 54  | 219.82   | 10.487    | 66.653     | 76  | 3226.28  | 0.000     | 100.000    |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 249.98   | 9.308     | 75.960     | 77  | 3671.49  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.03    | 0.000     | 0.000      | 56  | 279.04   | 7.839     | 83.797     | 78  | 4081.83  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 315.27   | 6.342     | 90.139     | 79  | 4612.81  | 0.000     | 100.000    |
| 14  | 1.66     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 358.20   | 4.877     | 94.746     | 80  | 5222.98  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.45    | 0.000     | 0.000      | 59  | 408.44   | 3.560     | 97.604     | 81  | 5907.02  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.01    | 0.000     | 0.000      | 60  | 464.60   | 1.909     | 99.411     | 82  | 6667.10  | 0.000     | 100.000    |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.07    | 0.000     | 0.000      | 61  | 513.71   | 0.828     | 99.607     | 83  | 7532.28  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.58    | 0.000     | 0.000      | 62  | 560.41   | 0.363     | 100.000    | 84  | 8510.56  | 0.000     | 100.000    |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.75    | 0.000     | 0.000      | 63  | 605.78   | 0.000     | 100.000    | 85  | 9615.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.53    | 0.000     | 0.000      | 64  | 640.89   | 0.000     | 100.000    | 86  | 10863.72 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.08    | 0.000     | 0.000      | 65  | 667.07   | 0.000     | 100.000    |     |          |           |            |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 684.74   | 0.000     | 100.000    |     |          |           |            |

R3-100 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

**SZ-100**

**Nanopartikel PLGA 100X.nsz  
Measurement Results**

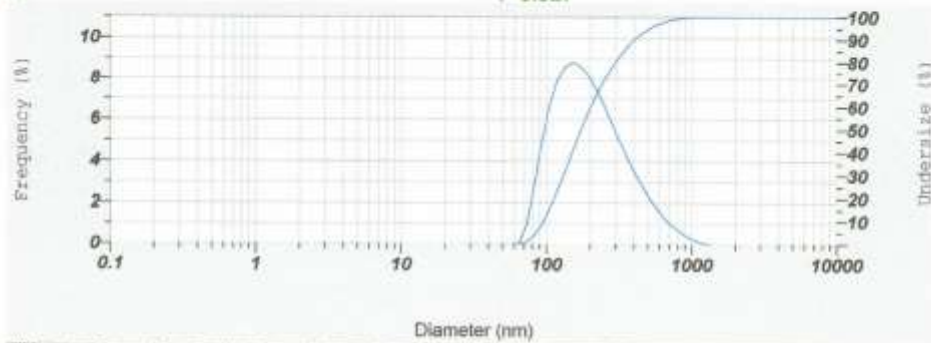
Date : Wednesday, April 25, 2018 4:35:59 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 100X  
 Scattering Angle : 90  
 Temperature of the Holder : 25.0 deg. C  
 Dispersion Medium Viscosity : 0.896 mPa.s  
 Transmission Intensity before Meas. : 34373  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 517 kCPS

**Calculation Results**

| Peak No. | S.P.Area Ratio | Mean     | S. D.    | Mode     |
|----------|----------------|----------|----------|----------|
| 1        | 1.00           | 218.1 nm | 142.1 nm | 142.7 nm |
| 2        | ---            | --- nm   | --- nm   | --- nm   |
| 3        | ---            | --- nm   | --- nm   | --- nm   |
| Total    | 1.00           | 218.1 nm | 142.1 nm | 142.7 nm |

**Cumulat Operations**

Z-Average : 170.8 nm  
 PI : 0.327



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 72.87    | 0.910     | 0.910      | 87  | 1088.02  | 0.188     | 99.948     |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 80.33    | 2.844     | 3.754      | 88  | 1207.24  | 0.043     | 99.991     |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 89.02    | 4.610     | 8.364      | 89  | 1365.87  | 0.002     | 99.993     |
| 4   | 0.49     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 105.10   | 6.838     | 15.202     | 90  | 1541.04  | 0.000     | 99.993     |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 119.74   | 7.860     | 23.062     | 91  | 1741.10  | 0.000     | 99.993     |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 134.16   | 8.591     | 31.653     | 92  | 1967.14  | 0.000     | 99.993     |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.57   | 8.788     | 40.441     | 93  | 2222.91  | 0.000     | 99.993     |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.69    | 0.000     | 0.000      | 52  | 171.35   | 8.627     | 49.143     | 94  | 2511.05  | 0.000     | 99.993     |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.48   | 8.171     | 57.313     | 95  | 2827.54  | 0.000     | 99.993     |
| 10  | 1.02     | 0.000     | 0.000      | 32  | 14.89    | 0.000     | 0.000      | 54  | 218.80   | 7.509     | 64.822     | 96  | 3266.30  | 0.000     | 99.993     |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 248.86   | 6.723     | 71.545     | 97  | 3821.48  | 0.000     | 99.993     |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.03    | 0.000     | 0.000      | 56  | 279.04   | 5.880     | 77.425     | 98  | 4491.83  | 0.000     | 99.993     |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 313.27   | 5.033     | 82.458     | 99  | 5272.61  | 0.000     | 99.993     |
| 14  | 1.65     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 352.20   | 4.218     | 86.677     | 100 | 6155.86  | 0.000     | 99.993     |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.45    | 0.000     | 0.000      | 59  | 395.44   | 3.495     | 90.142     | 101 | 7142.02  | 0.000     | 99.993     |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.01    | 0.000     | 0.000      | 60  | 454.89   | 2.795     | 92.927     | 102 | 8237.10  | 0.000     | 99.993     |
| 17  | 2.39     | 0.000     | 0.000      | 39  | 35.03    | 0.000     | 0.000      | 61  | 513.71   | 2.186     | 95.113     | 103 | 9431.89  | 0.000     | 99.993     |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.58    | 0.000     | 0.000      | 62  | 580.41   | 1.670     | 96.783     | 104 | 10716.58 | 0.000     | 99.993     |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.72    | 0.000     | 0.000      | 63  | 653.78   | 1.232     | 98.015     | 105 | 12091.42 | 0.000     | 99.993     |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.53    | 0.000     | 0.000      | 64  | 740.89   | 0.868     | 98.883     | 106 | 13556.72 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.06    | 0.000     | 0.000      | 65  | 837.27   | 0.571     | 99.454     |     |          |           |            |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 945.74   | 0.330     | 99.788     |     |          |           |            |

R1-250 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

SZ-100

Nanopartikel PLGA 250X R1.nsz  
Measurement Results

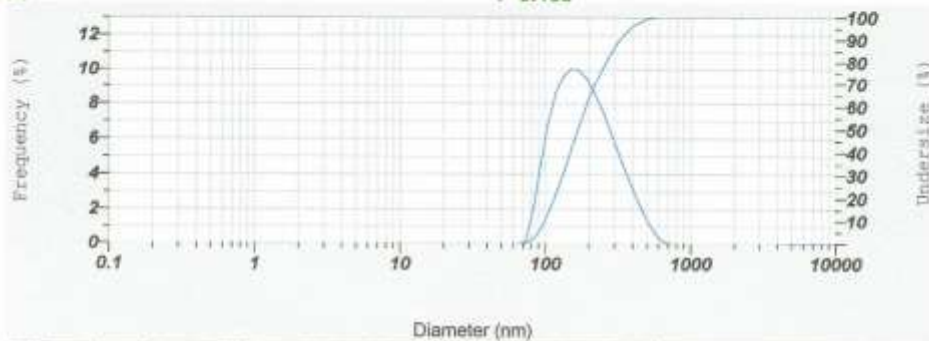
Date : Wednesday, April 25, 2018 4:23:39 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 250X  
 Scattering Angle : 90  
 Temperature of the Holder : 24.9 deg. C  
 Dispersion Medium Viscosity : 0.897 mPa.s  
 Transmission Intensity before Meas. : 30169  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 236 kCPS

Calculation Results

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 192.8 nm | 92.6 nm | 142.9 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 192.8 nm | 92.6 nm | 142.9 nm |

Cumulant Operations

Z-Average : 168.4 nm  
 PI : 0.166



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.24     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 72.37    | 0.041     | 0.24       | 67  | 1068.50  | 0.000     | 100.000    |
| 2   | 0.35     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 82.25    | 1.986     | 2.027      | 68  | 1707.24  | 0.000     | 100.000    |
| 3   | 0.49     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 97.97    | 4.976     | 6.999      | 69  | 2613.97  | 0.000     | 100.000    |
| 4   | 0.66     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 116.10   | 8.999     | 13.448     | 70  | 3541.04  | 0.000     | 100.000    |
| 5   | 0.88     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 134.16   | 8.615     | 21.025     | 71  | 4741.50  | 0.000     | 100.000    |
| 6   | 1.15     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 154.16   | 6.615     | 27.639     | 72  | 6107.14  | 0.000     | 100.000    |
| 7   | 1.50     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 175.87   | 10.031    | 37.670     | 73  | 7722.51  | 0.000     | 100.000    |
| 8   | 1.95     | 0.000     | 0.000      | 30  | 11.66    | 0.000     | 0.000      | 52  | 199.25   | 9.975     | 47.645     | 74  | 9579.05  | 0.000     | 100.000    |
| 9   | 2.55     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 224.42   | 9.408     | 57.053     | 75  | 11651.54 | 0.000     | 100.000    |
| 10  | 3.30     | 0.000     | 0.000      | 32  | 14.97    | 0.000     | 0.000      | 54  | 251.60   | 8.896     | 65.949     | 76  | 13933.35 | 0.000     | 100.000    |
| 11  | 4.20     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 280.98   | 7.884     | 73.833     | 77  | 16417.48 | 0.000     | 100.000    |
| 12  | 5.30     | 0.000     | 0.000      | 34  | 18.80    | 0.000     | 0.000      | 56  | 312.54   | 6.861     | 80.694     | 78  | 19095.25 | 0.000     | 100.000    |
| 13  | 6.60     | 0.000     | 0.000      | 35  | 21.80    | 0.000     | 0.000      | 57  | 346.27   | 5.296     | 85.990     | 79  | 21962.81 | 0.000     | 100.000    |
| 14  | 8.10     | 0.000     | 0.000      | 36  | 24.90    | 0.000     | 0.000      | 58  | 382.20   | 4.135     | 89.125     | 80  | 25019.98 | 0.000     | 100.000    |
| 15  | 9.90     | 0.000     | 0.000      | 37  | 28.20    | 0.000     | 0.000      | 59  | 420.44   | 3.061     | 91.186     | 81  | 28267.02 | 0.000     | 100.000    |
| 16  | 1.20     | 0.000     | 0.000      | 38  | 31.70    | 0.000     | 0.000      | 60  | 461.06   | 2.068     | 92.254     | 82  | 31704.70 | 0.000     | 100.000    |
| 17  | 1.50     | 0.000     | 0.000      | 39  | 36.00    | 0.000     | 0.000      | 61  | 513.71   | 1.196     | 93.419     | 83  | 35323.85 | 0.000     | 100.000    |
| 18  | 1.80     | 0.000     | 0.000      | 40  | 39.50    | 0.000     | 0.000      | 62  | 568.41   | 0.507     | 94.626     | 84  | 39115.56 | 0.000     | 100.000    |
| 19  | 2.10     | 0.000     | 0.000      | 41  | 44.20    | 0.000     | 0.000      | 63  | 635.76   | 0.074     | 95.900     | 85  | 43081.42 | 0.000     | 100.000    |
| 20  | 2.40     | 0.000     | 0.000      | 42  | 49.50    | 0.000     | 0.000      | 64  | 716.89   | 0.060     | 97.960     | 86  | 47213.72 | 0.000     | 100.000    |
| 21  | 2.80     | 0.000     | 0.000      | 43  | 55.50    | 0.000     | 0.000      | 65  | 811.97   | 0.030     | 99.990     |     |          |           |            |
| 22  | 3.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 948.74   | 0.000     | 100.000    |     |          |           |            |

R2-250 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

**SZ-100**

**Nanopartikel PLGA 250X R2.nsz**

**Measurement Results**

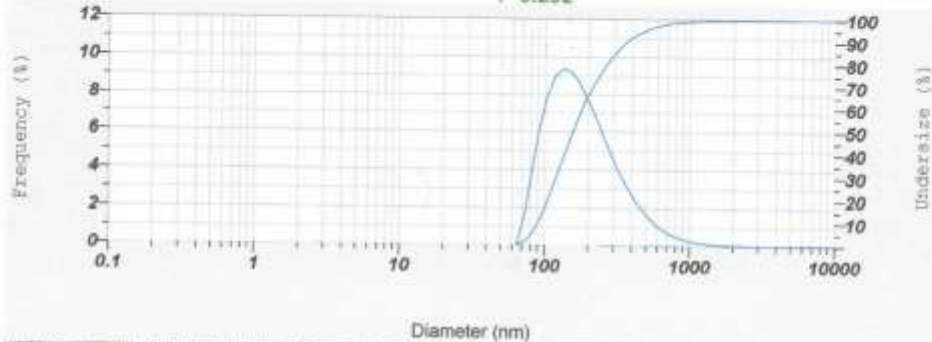
Date : Wednesday, April 25, 2018 4:21:18 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 250X  
 Scattering Angle : 90  
 Temperature of the Holder : 24.8 deg. C  
 Dispersion Medium Viscosity : 0.899 mPa.s  
 Transmission Intensity before Meas. : 30169  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 231 kCPS

**Calculation Results**

| Peak No. | S.P.Area Ratio | Mean      | S. D.     | Mode      |
|----------|----------------|-----------|-----------|-----------|
| 1        | 1.00           | 206.1 nm  | 177.4 nm  | 126.4 nm  |
| 2        | 0.00           | 5735.7 nm | 1784.2 nm | 4349.3 nm |
| 3        | ---            | --- nm    | --- nm    | --- nm    |
| Total    | 1.00           | 222.8 nm  | 365.1 nm  | 126.4 nm  |

**Cumulant Operations**

Z-Average : 166.4 nm  
 PI : 0.292



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.87     | 0.000     | 0.000      | 45  | 72.87    | 1.572     | 1.572      | 67  | 1068.32  | 0.718     | 99.118     |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 82.33    | 3.394     | 4.966      | 68  | 1207.24  | 0.151     | 99.270     |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 93.92    | 4.328     | 9.294      | 69  | 1363.97  | 0.108     | 99.378     |
| 4   | 0.49     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 106.10   | 5.316     | 14.610     | 70  | 1541.04  | 0.076     | 99.454     |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 118.74   | 6.360     | 20.970     | 71  | 1741.10  | 0.057     | 99.511     |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 134.10   | 7.468     | 28.438     | 72  | 1967.14  | 0.045     | 99.556     |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 151.67   | 8.730     | 37.168     | 73  | 2222.91  | 0.036     | 99.592     |
| 8   | 0.78     | 0.000     | 0.000      | 30  | 11.66    | 0.000     | 0.000      | 52  | 171.25   | 1.002     | 48.170     | 74  | 2511.05  | 0.030     | 99.622     |
| 9   | 0.86     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 193.48   | 1.202     | 60.372     | 75  | 2837.94  | 0.025     | 99.647     |
| 10  | 1.02     | 0.000     | 0.000      | 32  | 14.91    | 0.000     | 0.000      | 54  | 218.90   | 1.459     | 76.831     | 76  | 3205.26  | 0.021     | 99.668     |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 246.91   | 1.775     | 96.606     | 77  | 3617.48  | 0.018     | 99.686     |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.05    | 0.000     | 0.000      | 56  | 279.04   | 2.150     | 121.756    | 78  | 4079.83  | 0.015     | 99.701     |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.55    | 0.000     | 0.000      | 57  | 313.27   | 2.596     | 153.352    | 79  | 4592.91  | 0.013     | 99.714     |
| 14  | 1.66     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 356.20   | 3.109     | 194.461    | 80  | 5167.96  | 0.011     | 99.725     |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.40    | 0.000     | 0.000      | 59  | 405.44   | 3.691     | 245.152    | 81  | 5805.10  | 0.009     | 99.734     |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.01    | 0.000     | 0.000      | 60  | 464.66   | 4.344     | 301.496    | 82  | 6506.72  | 0.008     | 99.742     |
| 17  | 2.36     | 0.000     | 0.000      | 39  | 35.09    | 0.000     | 0.000      | 61  | 533.71   | 5.078     | 364.574    | 83  | 7275.49  | 0.007     | 99.749     |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.86    | 0.000     | 0.000      | 62  | 613.27   | 5.891     | 433.465    | 84  | 8114.98  | 0.006     | 99.755     |
| 19  | 3.05     | 0.000     | 0.000      | 41  | 44.74    | 0.000     | 0.000      | 63  | 703.76   | 6.784     | 508.249    | 85  | 9029.42  | 0.005     | 99.760     |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.55    | 0.000     | 0.000      | 64  | 805.76   | 7.767     | 588.016    | 86  | 10013.42 | 0.004     | 99.764     |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.09    | 0.000     | 0.000      | 65  | 920.27   | 8.840     | 672.856    | 87  | 11070.72 | 0.004     | 99.768     |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.90    | 0.000     | 0.000      | 66  | 1047.74  | 1.002     | 763.080    | 88  | 12205.00 | 0.003     | 99.771     |

Export the Data...

Horizontal Axis: Diameter (nm) Vertical Axis: Frequency (%)





R3-250 Kali



HORIBA SZ-100 for Windows [Z Type] Ver2.00

SZ-100

Nanopartikel PLGA 250X.nsz  
Measurement Results

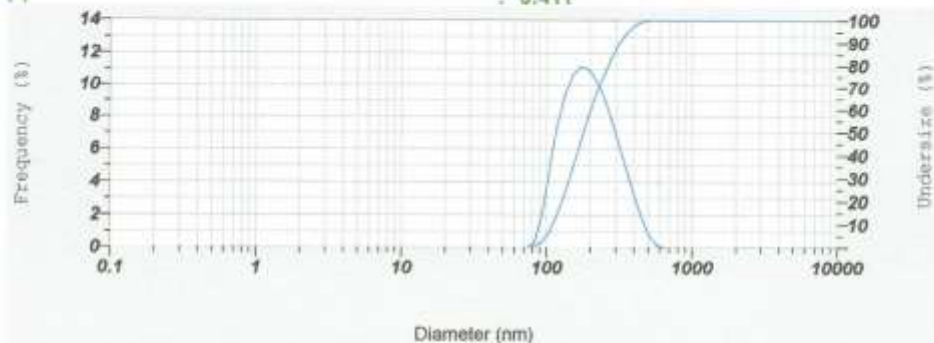
Date : Wednesday, April 25, 2018 4:25:25 PM  
 Measurement Type : Particle Size  
 Sample Name : Nanopartikel PLGA 250X  
 Scattering Angle : 90  
 Temperature of the Holder : 24.8 deg. C  
 Dispersion Medium Viscosity : 0.898 mPa.s  
 Transmission Intensity before Meas. : 30169  
 Distribution Form : [Standard]  
 Distribution Form(Dispersity) : Monodisperse  
 Representation of Result : Scattering Light Intensity  
 Count Rate : 258 kCPS

Calculation Results

| Peak No. | S.P.Area Ratio | Mean     | S. D.   | Mode     |
|----------|----------------|----------|---------|----------|
| 1        | 1.00           | 199.2 nm | 81.9 nm | 161.4 nm |
| 2        | ---            | --- nm   | --- nm  | --- nm   |
| 3        | ---            | --- nm   | --- nm  | --- nm   |
| Total    | 1.00           | 199.2 nm | 81.9 nm | 161.4 nm |

Cumulant Operations

Z-Average : 162.8 nm  
 PI : 0.411



| No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation | No. | Diameter | Frequency | Cumulation |
|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|-----|----------|-----------|------------|
| 1   | 0.34     | 0.000     | 0.000      | 23  | 4.97     | 0.000     | 0.000      | 45  | 77.87    | 0.000     | 0.000      | 67  | 1098.57  | 0.000     | 100.000    |
| 2   | 0.38     | 0.000     | 0.000      | 24  | 5.61     | 0.000     | 0.000      | 46  | 83.35    | 0.000     | 0.000      | 68  | 1207.24  | 0.000     | 100.000    |
| 3   | 0.43     | 0.000     | 0.000      | 25  | 6.34     | 0.000     | 0.000      | 47  | 92.02    | 0.000     | 0.000      | 69  | 1363.97  | 0.000     | 100.000    |
| 4   | 0.48     | 0.000     | 0.000      | 26  | 7.17     | 0.000     | 0.000      | 48  | 105.10   | 0.000     | 0.000      | 70  | 1561.04  | 0.000     | 100.000    |
| 5   | 0.55     | 0.000     | 0.000      | 27  | 8.10     | 0.000     | 0.000      | 49  | 119.74   | 0.000     | 0.000      | 71  | 1741.50  | 0.000     | 100.000    |
| 6   | 0.62     | 0.000     | 0.000      | 28  | 9.15     | 0.000     | 0.000      | 50  | 136.18   | 0.000     | 0.000      | 72  | 1967.14  | 0.000     | 100.000    |
| 7   | 0.70     | 0.000     | 0.000      | 29  | 10.34    | 0.000     | 0.000      | 51  | 155.57   | 0.000     | 0.000      | 73  | 2223.81  | 0.000     | 100.000    |
| 8   | 0.80     | 0.000     | 0.000      | 30  | 11.68    | 0.000     | 0.000      | 52  | 177.26   | 0.000     | 0.000      | 74  | 2511.05  | 0.000     | 100.000    |
| 9   | 0.90     | 0.000     | 0.000      | 31  | 13.20    | 0.000     | 0.000      | 53  | 199.48   | 0.000     | 0.000      | 75  | 2837.04  | 0.000     | 100.000    |
| 10  | 1.00     | 0.000     | 0.000      | 32  | 14.91    | 0.000     | 0.000      | 54  | 218.90   | 0.000     | 0.000      | 76  | 3205.35  | 0.000     | 100.000    |
| 11  | 1.15     | 0.000     | 0.000      | 33  | 16.84    | 0.000     | 0.000      | 55  | 246.98   | 0.000     | 0.000      | 77  | 3621.48  | 0.000     | 100.000    |
| 12  | 1.30     | 0.000     | 0.000      | 34  | 19.00    | 0.000     | 0.000      | 56  | 275.04   | 0.000     | 0.000      | 78  | 4081.65  | 0.000     | 100.000    |
| 13  | 1.47     | 0.000     | 0.000      | 35  | 21.50    | 0.000     | 0.000      | 57  | 315.27   | 0.000     | 0.000      | 79  | 4602.81  | 0.000     | 100.000    |
| 14  | 1.68     | 0.000     | 0.000      | 36  | 24.29    | 0.000     | 0.000      | 58  | 369.50   | 0.000     | 0.000      | 80  | 5202.86  | 0.000     | 100.000    |
| 15  | 1.87     | 0.000     | 0.000      | 37  | 27.45    | 0.000     | 0.000      | 59  | 439.44   | 0.000     | 0.000      | 81  | 5891.02  | 0.000     | 100.000    |
| 16  | 2.11     | 0.000     | 0.000      | 38  | 31.07    | 0.000     | 0.000      | 60  | 524.69   | 0.000     | 0.000      | 82  | 6667.10  | 0.000     | 100.000    |
| 17  | 2.38     | 0.000     | 0.000      | 39  | 35.20    | 0.000     | 0.000      | 61  | 615.71   | 0.000     | 0.000      | 83  | 7532.85  | 0.000     | 100.000    |
| 18  | 2.70     | 0.000     | 0.000      | 40  | 39.98    | 0.000     | 0.000      | 62  | 720.41   | 0.000     | 0.000      | 84  | 8510.58  | 0.000     | 100.000    |
| 19  | 3.08     | 0.000     | 0.000      | 41  | 44.72    | 0.000     | 0.000      | 63  | 846.78   | 0.000     | 0.000      | 85  | 9615.42  | 0.000     | 100.000    |
| 20  | 3.45     | 0.000     | 0.000      | 42  | 50.53    | 0.000     | 0.000      | 64  | 986.89   | 0.000     | 0.000      | 86  | 10867.72 | 0.000     | 100.000    |
| 21  | 3.89     | 0.000     | 0.000      | 43  | 57.09    | 0.000     | 0.000      | 65  | 1141.07  | 0.000     | 0.000      | 87  | 12300.00 | 0.000     | 100.000    |
| 22  | 4.40     | 0.000     | 0.000      | 44  | 64.50    | 0.000     | 0.000      | 66  | 1315.74  | 0.000     | 0.000      | 88  | 13930.00 | 0.000     | 100.000    |

Copyright © 2010 HORIBA

Copyright © 2010 HORIBA, Inc. All Rights Reserved. HORIBA Scientific, Inc. 2010

HORIBA