scatteroscope

New Concept in Particle Size Analysis

Particle Size Analysis Report

01:37:41

¶ Data Information

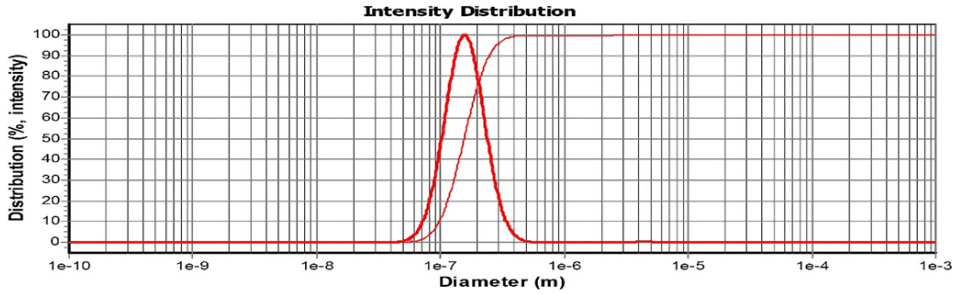
- **Project Name** od
- **Data Name** od0.08-3
- **Sample Source**
- **Remarks**

¶ Measurement Conditions

Measurement Start Time	2009/01/01 01:34:41	**Solvent**	water
Measurement End Time	2009/01/01 01:34:44	**- Refractive Index**	1.3300
Exposure Type	Single Exposure	**- Viscosity**	0.9935 cP
Total Exposure Time	1 sec	**Solute**	water
Exposure Time Length	246 msec	**- Refractive Index**	1.3300
Average Count Rate	29 kcps	**- Absorption Coefficient**	0.0000 cm-1
Temperature	21 iÆC	**Machine Serial Number**	2000-040

¶ Analysis Results

d(0)	39.3 nm / 63.8 nm	**d(5)**	85.9 nm / 2.32 um	**# of Peaks**	2
d(10)	97.3 nm / 2.71 um	**d(25)**	123 nm / 3.43 um	156 nm	4.4 um
d(50)	156 nm / 4.40 um	**d(75)**	200 nm / 5.57 um		
d(90)	249 nm / 6.93 um	**d(95)**	286 nm / 7.98 um		
d(100)	8.90 um / 17.4 um				



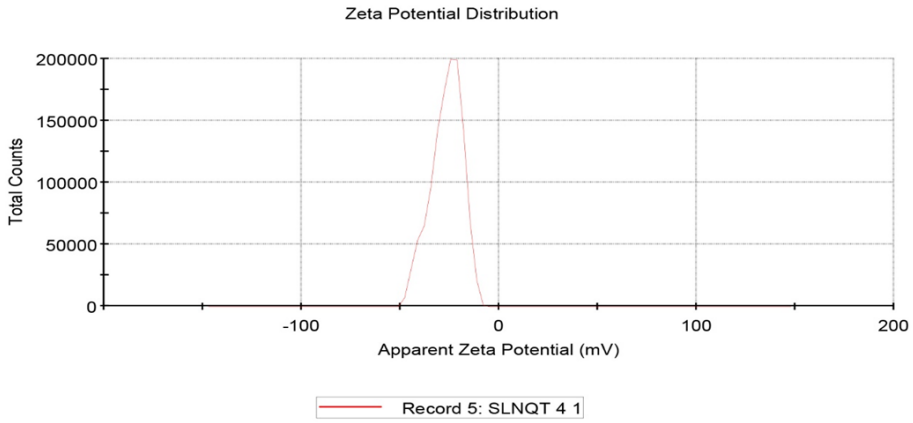
Appendix 1. The particle size distribution of quercetin and SLN was determined using dynamic light scattering (DLS)

System

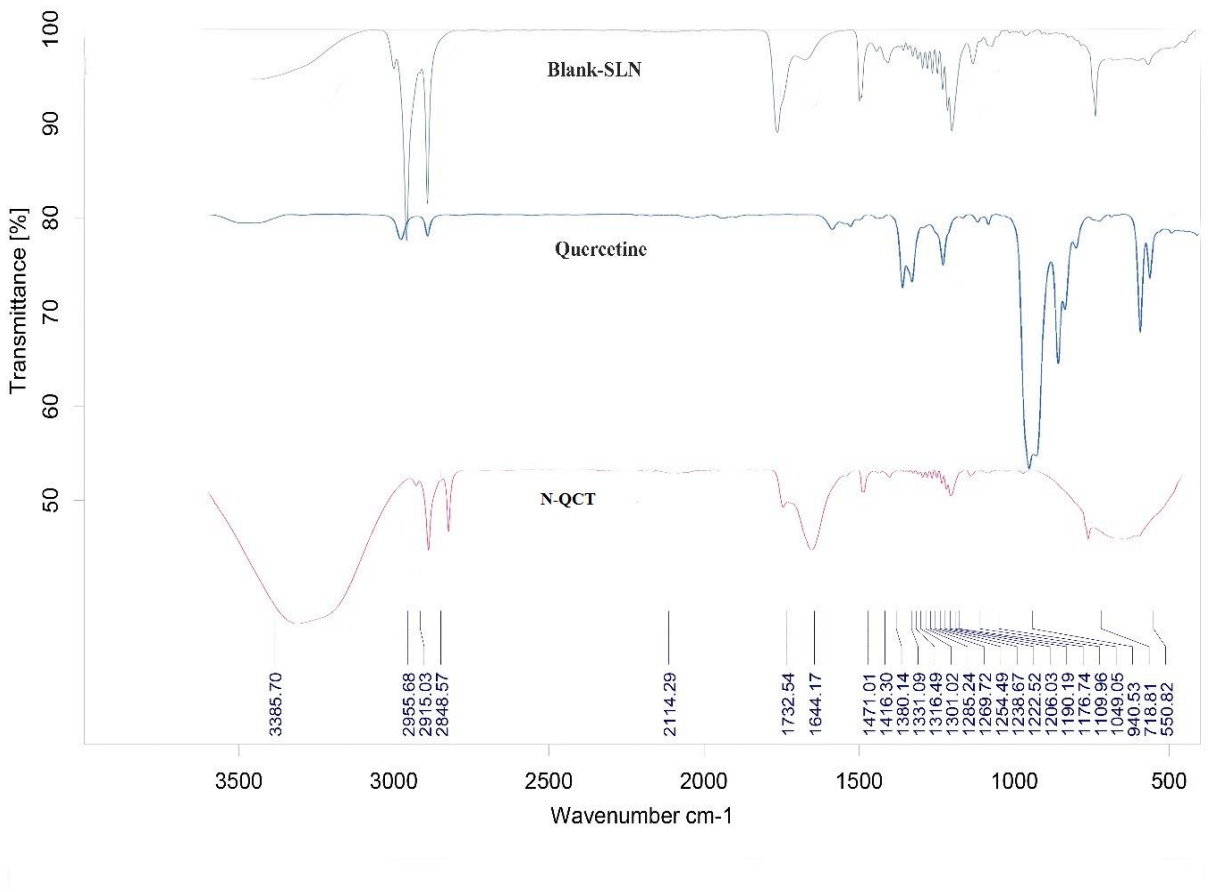
Temperature (°C):	25.0	**Zeta Runs:**	30
Count Rate (kcps):	141.5	**Measurement Position (mm):**	2.00
Cell Description:	Clear disposable zeta cell	**Attenuator:**	6

Results

			Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV):	-27.7	**Peak 1:**	-26.7	100.0	7.86
Zeta Deviation (mV):	15.8	**Peak 2:**	0.00	0.0	0.00
Conductivity (mS/cm):	0.0147	**Peak 3:**	0.00	0.0	0.00
Result quality :	See result quality report				



Appendix 2. The distribution of zeta potential in quercetin and solid lipid nanoparticles (SLN) was examined.



Appendix 3. QU, Blank-SLN, and N-QCT FTIR spectra

Appendix 4. Formulation of QU-SLN.

Sample(Formulation)	Drug-Lipid Ratio	Coprit ol(mg)	Quercetin (mg)	Oleic Acid (gr)	PVA(1 %) (ml)	Lecitin (gr)	EE(%)	LD(%)
QU-SLN1	1:1	100	100	0.25	4	0. 5	65.6 ± 3.3	1.02% ± 2.6
Blank-SLN1	-	100	-	0.25	4	0. 5		
QU-SLN2	1:5	500	100	0.25	4	0. 5	74.4 ± 2.8	1.24% ± 2.9
Blank-SLN2	-	500	-	0.25	4	0. 5		
QU-SLN3	1:10	1000	100	0.25	4	0. 5	87.3 ± 3.8	1.62% ± 3.1
Blank-SLN3	-	1000	-	0.25	4	0. 5		
QU-SLN4	1:30	3000	100	0.25	4	0. 5	96.6 ± 2.3	1.78% ± 3.3
Blank-SLN4	-	300	-	0.25	4	0. 5		
QU-SLN5	1:47.5	4750	100	0.25	4	0. 5	99.3 ± 1.2	1.81% ± 2.1
Blank-SLN5	-	4750	-	0.25	4	0. 5		

SD: standad deviation, LD: loading agent, EE: encapsulation; (mean ± SD), The results have been analyzed after three repetitions.

Appendix 5. The mole fraction of each combination of N-QCT and Curcumin

Curcumin	10	25	50	100	150
N-QCT					
10	78.44	67.89	77.21	59.07	46.54
25	66.97	62.89	50.67	44.62	31.07
50	57.19	41.27	54.78	28.09	42.19
100	43.27	33.57	39.07	18.97	39.41
150	22.08	28.07	18.08	13.69	17.97

Appendix 6. Quantification of Western Blots with Image J

Step	Description
1. Scanning the Western Blot Film	The Western blot film was scanned at high resolution to ensure accurate detection of protein bands.
2. Downloading the Image	The scanned image of the Western blot was saved in a compatible format (e.g., TIFF, JPEG) for further analysis
3. Installing ImageJ	ImageJ software was installed on the computer. The version used was [specify version].
4. Setting the Measurement Criteria	Open the image file of the protein band scan in ImageJ. Select the "Rectangle" tool from the top toolbar to outline all protein bands of interest.
5. Analyzing the Gel	Navigate to the “Analyze” menu on the top toolbar, select “Gels,” and then choose “Select First Lane” (Ctrl+1) for horizontal comparison of bands. Then, go to the “Analyze” menu, select “Gels,” and click on “Plot Lanes” to generate a plot of the intensity profiles across the lanes.
6. Drawing and Measuring	Use the “Straight” tool from the top toolbar to draw across the plot at the base of the chart, helping to measure the intensity accurately. Select the “Wand” (tracing tool) from the top toolbar and click on each area of the plot to identify and highlight the peaks corresponding to the protein bands.
7. Labeling and Exporting Results	Return to the “Analyze” menu, select “Gels,” and then click on “Label Peaks” to label the peaks on the plot. Click “OK” to finalize. Copy the results from the ImageJ output and paste them into Excel or Prism software for further analysis and visualization.