



Natco Pharma Limited

Regd. Off. : 'NATCO HOUSE', Road No. 2, Banjara Hills, Hyderabad - 500034.
Telangana, INDIA. Tel : +91 40 23547532, Fax : +91 40 23548243
CIN : L24230TG1981PLC003201, www.natcopharma.co.in

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is made and entered into as of 10th August 2018.

BETWEEN

Natco Pharma Limited, a company incorporated in accordance with the laws of INDIA and having its corporate office situated at Road No 2, Banjara Hills, Hyderabad- 500034 Telangana, (hereinafter referred to as "NATCO"), represented by Sri. A. Lakshminarayana, Vice President - HR.

AND

RBVRR Women's College of Pharmacy, Approved by PCI, Affiliated to Osmania University having its office at Barkatpura, Hyderabad-500027 Telangana (hereinafter referred to as "RBVRR").

WITNESETH

A. WHEREAS, NATCO and RBVRR have entered into an MOU, dated 10th August 2018, for the purpose of research and development.

B. NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL UNDERSTANDINGS, COVENANTS AND OBLIGATIONS HEREINAFTER SET FORTH, NATCO and RBVRR HERE TO AGREE AS FOLLOWS:

A. Role of RBVRR:

1. RBVRR will conduct the research and development work provided by NATCO Research Center scale synthesis of certain drug intermediates, formulation development of certain specific drug, plan for innovation of the existing formulations of NATCO from the date of signing this MOU.
2. RBVRR has the requisite technical manpower to perform the various R&D projects.



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3. RBVRR also has the necessary labs with equipment and instruments to carry out the projects.
4. RBVRR shall update from time to time to the concerned executive of NATCO about the progress of the work.
5. RBVRR shall strictly adhere to the timelines of the projects.
6. RBVRR will maintain strict confidentiality of the R&D projects.
7. RBVRR shall not divulge any of the information of the R&D works carried out to any third party, if so NATCO will have every right to take legal action against RBVRR.
8. RBVRR will not publish the R&D works in any of the scientific journals or present the data in any of the conferences.
9. RBVRR shall issue the invoice related to the R&D projects as agreed by NATCO before the commencement of the project.
10. RBVRR Shall maintain the records and samples of the R&D project for three years after the project is over.
11. RBVRR shall provide the soft copy and the hardcopy of the project data.

C. Role of NATCO:

1. Will provide the details/documentation of the R&D projects to RBVRR for evaluation.
2. NATCO will evaluate and decide after going through the cost proposal of the R&D work from RBVRR.
3. Arranging industrial visits for B. Pharm/ M. Pharm students.
- 4 Providing drug samples for students pursuing projects.
5. Providing summer internship program for B. Pharm students.



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6. Utilization of research facilities for analysis of samples of M. Pharm students.
7. The above MOU is for an initial period of 36 months.
8. The parties agree not to disclose during the term of this MOU to any third parties the existence or nature of the business

IN WITNESS WHEREOF, THE PARTIES HERE TO HAVE CAUSED THIS MOU TO BE DULY EXECUTED BY THEIR RESPECTIVE OFFICERS.

Natco Pharma Limited
For NATCO Pharma Limited

RBVRR Women's College of Pharmacy

By:


A. LAKSHMINARAYANA
Vice President-HR

Name: A. Lakshminarayana

Title: Vice President - HR

By:



Name: Dr M. Sumakanth

Title: Principal

PRINCIPAL
RBVRR Women's College of Pharmacy
Barkatpura, Hyderabad - 500 027 (TS)

Collaboration between NATCO Pharma Ltd and RBVRR Women's College of Pharmacy for Particle Size Analysis

Collaborating Parties: NATCO Pharma Ltd and RBVRR Women's College of Pharmacy

As per the Memorandum of Understanding (MOU) between NATCO Pharma Ltd and RBVRR Women's College of Pharmacy, a collaborative initiative has been established to conduct particle size analysis for formulations prepared by the project students pursuing M.Pharmacy in Pharmaceutics.

Objective: The primary objective of this collaboration is to provide students with practical exposure to advanced analytical techniques and instrumentation used in pharmaceutical research and development. By availing the expertise and resources of NATCO Pharma Ltd, the project students can enhance their understanding of particle size characterization and its relevance in formulation development.

Overview of the Collaboration: Under this collaboration, the project students of M.Pharmacy in Pharmaceutics at RBVRR Women's College of Pharmacy prepare various formulations as part of their academic projects. These formulations encompass diverse pharmaceutical dosage forms such as tablets, capsules, suspensions, and emulsions.

Following the preparation of these formulations, NATCO Pharma Ltd facilitates particle size analysis using state-of-the-art instrumentation and methodologies available at their research facility. Particle size analysis is a crucial parameter in pharmaceutical formulation development as it influences the stability, bioavailability, and therapeutic efficacy of the final product.

Implementation: Upon completion of the formulations by the project students, samples are submitted to NATCO Pharma Ltd for particle size analysis. The analysis is conducted by skilled analysts and scientists proficient in particle characterization techniques such as laser diffraction, dynamic light scattering (DLS), and microscopy.

NATCO Pharma Ltd ensures accurate and precise particle size measurements, providing valuable data and insights to the project students. The results obtained from the particle size analysis contribute to the optimization and refinement of the formulations, enabling students to enhance their research outcomes and academic learning.

Impact and Benefits: The collaboration between NATCO Pharma Ltd and RBVRR Women's College of Pharmacy offers numerous benefits to both parties:

1. **Enhanced Learning Experience:** Students gain hands-on experience with advanced analytical techniques and instrumentation, enriching their academic learning and skill development.
2. **Industry Exposure:** Students are exposed to industry best practices and standards in pharmaceutical research, preparing them for future careers in the pharmaceutical sector.

3. **Quality Assurance:** Particle size analysis conducted by NATCO Pharma Ltd ensures the quality and integrity of the formulations developed by the project students, thereby enhancing the credibility of their research findings.
4. **Academic-Industry Collaboration:** The collaboration fosters synergies between academia and industry, promoting knowledge exchange, innovation, and research excellence.

Conclusion: The collaborative initiative between NATCO Pharma Ltd and RBVRR Women's College of Pharmacy for particle size analysis represents a significant step towards bridging the gap between academia and industry in the field of pharmaceutical sciences. By leveraging the resources and expertise of NATCO Pharma Ltd, students receive invaluable support in their academic endeavors, paving the way for future advancements in pharmaceutical research and development.

Sample analysis reports are attached



RBVRR WOMEN'S COLLEGE OF PHARMACY

3-4-343, Barkathpura, Hyderabad - 500 027 (T.S), India

Office: +91 40-27563065, Mobile: +91 9848930555

(Approved by the AICTE, PCI & Affiliated to Osmania University)

Recognized under Section 2(f) of the UGC Act 1956

EAMCET Code: RBVW | PGECET Code: RBVW1

College Code: 1706

Prof. M. SUMAKANTH
Principal

www.rbvrrwcp.org | Email: rbvrrwcp@rediffmail.com & rbvrrwcp2006@gmail.com

No. /Acad/Students PW/WCP/2020,

Date: 25-09-2020

To

Prof. Apte
Head, Department of Formulation (R & D)
Research Centre
NatcoPharma Ltd.
Sanathnagar
HYDERABAD – (TS).

SUB: RBVRR-WCP – Providing of Assistance to the M.Pharmacy Students toperform Particle Size Analysis and Zeta Potentials for their Project Work – Request – Reg.

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Dear Sir,

The RBVRR Womens College of Pharmacy was established with the vision to make woman students to be a National Pharmacy Professionals through innovative vigorous & compassionate approach to Pharma Education. To achieve that Vision RBVRR Womens College of Pharmacy prepares woman students to be confident in their selecting fields by providing quality education with well qualified faculty and also by taking assistance from the reputed organizations as and when required for the benefit of the students.

In this regard, I am sending the following Bonafide students of this college who are pursuing M.Pharmacy (Final Semester) Course Project on Formulation development of SMEDDS, Nanoparticles, Niosomes, Ethosomes&Transforosomes to perform the “Particle Size Analysis and Zeta Potentials” at your esteemed organization as a part of their academic curriculum, since we do not have this facility of testing data on Particle Size Analyzer at our college. These students will carry the samples along with them for making data.

SI No	Name of the Student	H.T. Nos
1	Ms. G. Bhanu	1706-18-886-003
2	Ms. Nidha Begum	1706-18-886-006
3	Ms. UzmaAfreem	1706-18-886-007
4	Ms/ D. Vishwanayani	1706-18-886-009
5	Ms. PranayaRagini	1706-18-886-010
6	Ms. V. Swetha	1706-18-886-011
7	Ms. Akhila	1706-17-886-004

This is a very important aspect of our academic pursuit, which could become successful only due to your spontaneous cooperation and continuous support. We expect the same support and cooperation from you in all the academic and intellectual endeavors of our college.

Hence, I am requesting you to provide necessary arrangements for preparing the data analysis so that, the above students may complete their Project Work successfully.

Your co-operation and assistance over the years in this regard is appreciated.

Warm Regards.

Yours Sincerely,

(Prof /Mrs. M. SUMAKANTH)
Principal

NATCO PHARMA LIMITED
NDDSU at NRC
Size Distribution Report by Volume



Sample Details

Sample Name: INV 1 (1:1)

SOP Name: 12-5.sop

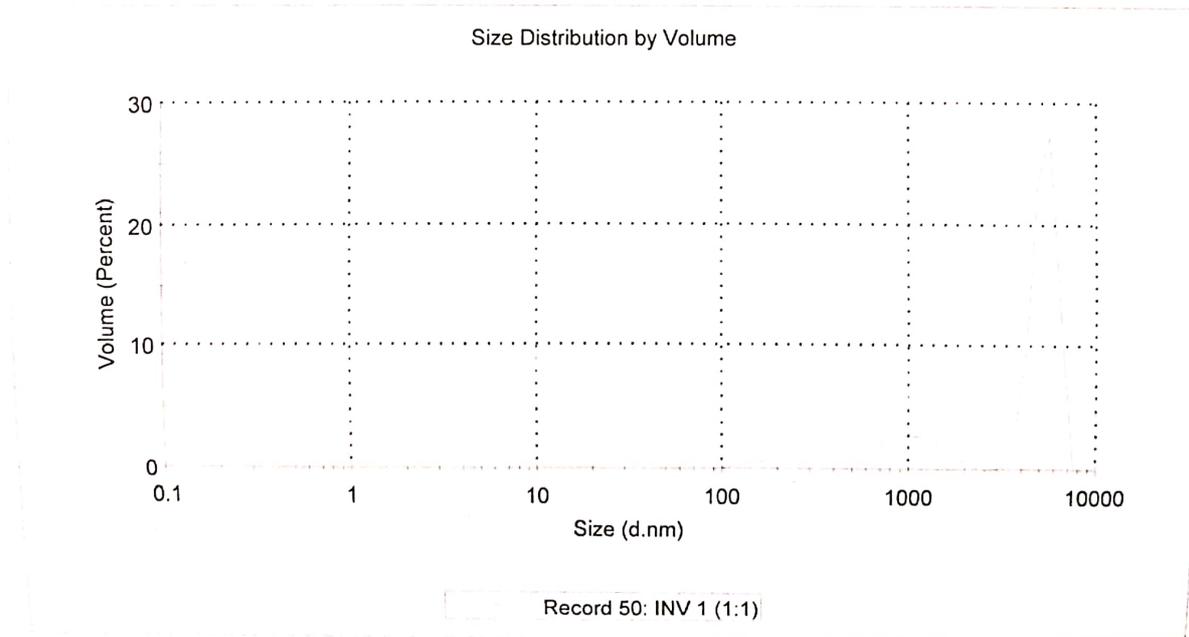
General Notes:

File Name: RBVRR college.dts	Dispersant Name: Water
Record Number: 50	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorbtion: 0.010	Measurement Date and Time: 30 September 2020 16:01:03

System

Temperature (°C): 25.0	Duration Used (s): 70
Count Rate (kcps): 359.4	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with square ape...	Attenuator: 11

Results	D(0.1): 695 nm	D(0.5): 4800 nm	D(0.9): 6230 nm
		Diam. (nm)	% Volume
Z-Average (d.nm): 572.4	Peak 1: 987.2		22.5
Pdl: 0.485	Peak 2: 188.4		4.2
Intercept: 0.943	Peak 3: 5195		73.3
Result quality : Good			



Size Distribution Report by Volume

Sample Details

Sample Name: ETHOSOMES C (1:5)

SOP Name: 12-5.sop

General Notes:

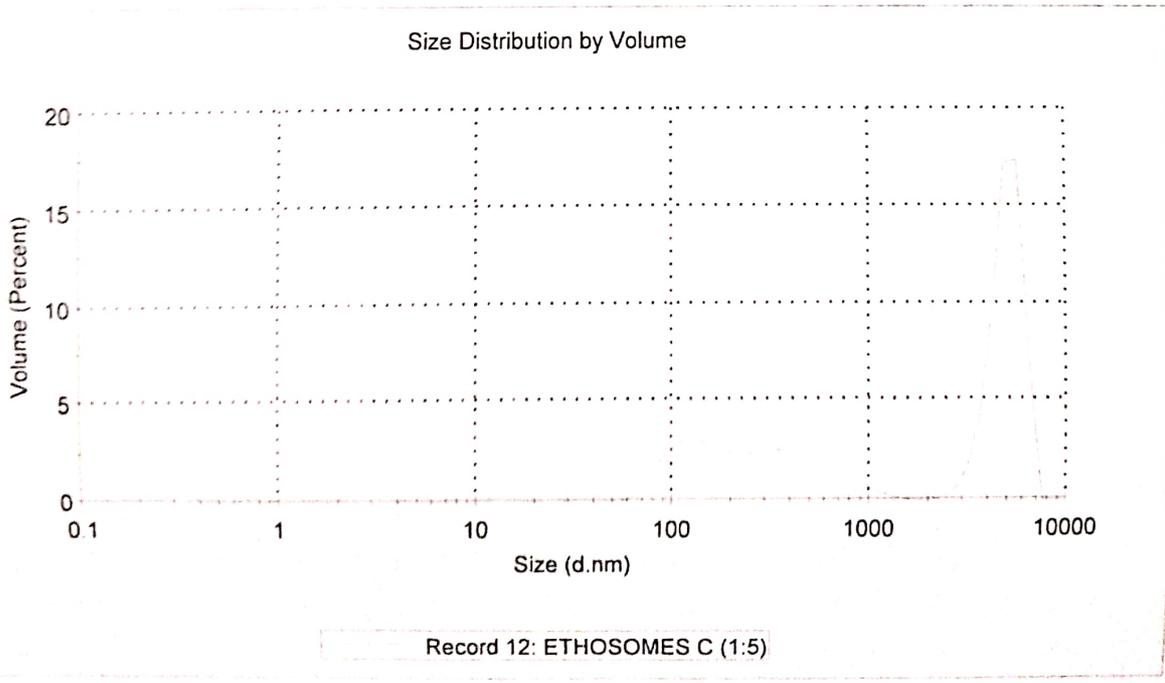
File Name: RBVRR college.dts	Dispersant Name: Water
Record Number: 12	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorbtion: 0.010	Measurement Date and Time: 30 September 2020 11:46:30

System

Temperature (°C): 25.0	Duration Used (s): 70
Count Rate (kcps): 183.9	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with square ape...	Attenuator: 11

Results

D(0.1): 130 nm	D(0.5): 3800 nm	D(0.9): 5940 nm	
Z-Average (d.nm): 254.6	Peak 1: 140.0	20.5	44.25
Pdl: 0.279	Peak 2: 474.0	23.8	228.4
Intercept: 0.950	Peak 3: 4948	55.6	882.2
Result quality : Good			



NATCO PHARMA LIMITED
NDDSU at NRC
Size Distribution Report by Volume



Sample Details

Sample Name: SLNs-PEG-400

SOP Name: 12-5 sop

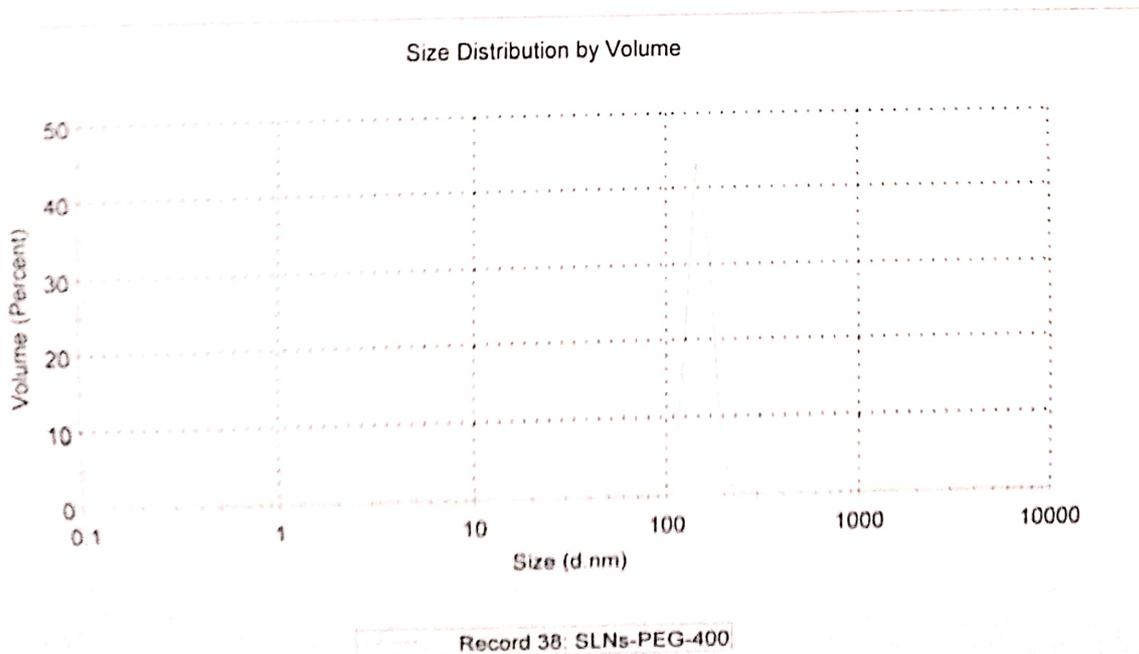
General Notes:

File Name: RBVRR college dts	Dispersant Name: Water
Record Number: 38	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorbtion: 0.010	Measurement Date and Time: 30 September 2020 14:50:22

System

Temperature (°C): 25.0	Duration Used (s): 70
Count Rate (kcps): 25.9	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with square ape...	Attenuator: 10

Results	D(0.1): 123 nm	D(0.5): 148 nm	D(0.9): 181 nm	
		Diam. (nm)	% Volume	Width (nm)
Z-Average (d.nm): 1198	Peak 1: 148.5		100.0	18.37
Pdl: 1.000	Peak 2: 0.000		0.0	0.000
Intercept: 1.19	Peak 3: 0.000		0.0	0.000
Result quality : Refer to quality report				



NATCO PHARMA LIMITED
NDDSU at NRC
Size Distribution Report by Volume



Sample Details

Sample Name: INV 5 (4:1)

SOP Name: 12-5.sop

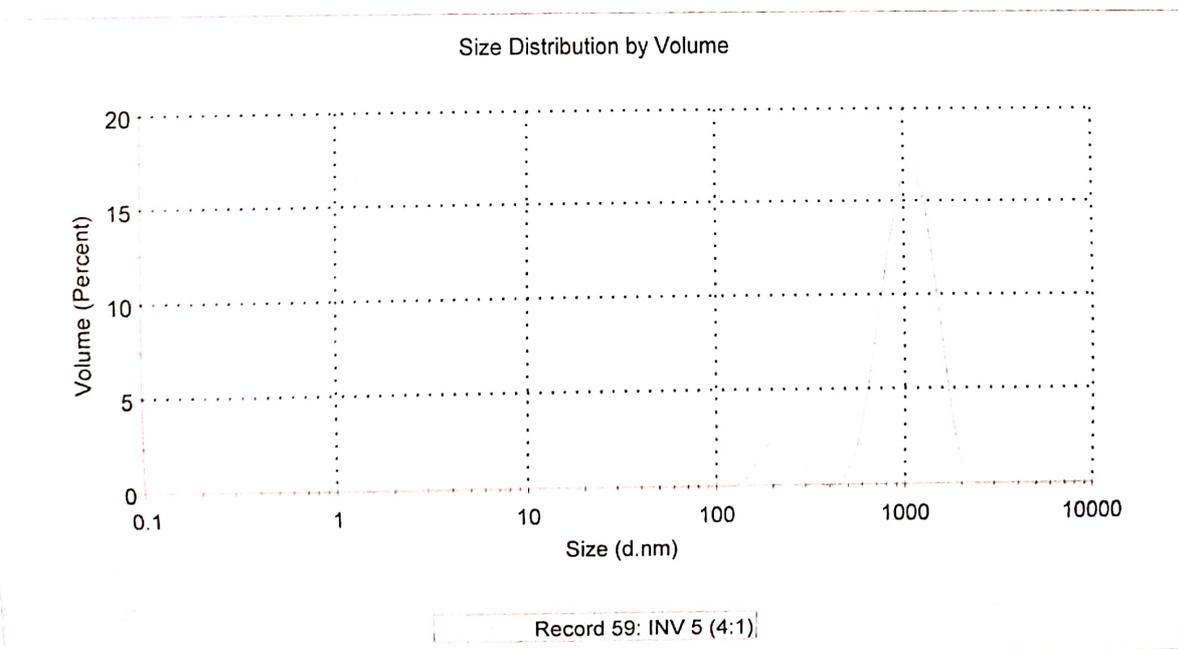
General Notes:

File Name: RBVRR college.dts	Dispersant Name: Water
Record Number: 59	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorbtion: 0.010	Measurement Date and Time: 30 September 2020 16:57:38

System

Temperature (°C): 25.0	Duration Used (s): 70
Count Rate (kcps): 226.8	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with square ape...	Attenuator: 10

Results	D(0.1): 430 nm	D(0.5): 994 nm	D(0.9): 1480 nm
		Diam. (nm)	% Volume
	Z-Average (d.nm): 637.1	Peak 1: 1070	90.1
	Pdl: 0.570	Peak 2: 216.7	9.9
	Intercept: 0.955	Peak 3: 0.000	0.0
	Result quality : Good		



NATCO PHARMA LIMITED
NDDSU at NRC
Size Distribution Report by Volume



Sample Details

Sample Name: B-CD-C4-1:4

SOP Name: 12-5.sop

General Notes:

File Name: RBVRR college.dts	Dispersant Name: Water
Record Number: 63	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorbtion: 0.010	Measurement Date and Time: 30 September 2020 17:21:19

System

Temperature (°C): 25.0	Duration Used (s): 70
Count Rate (kcps): 26.4	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with square ape...	Attenuator: 11

Results D(0.1): 151 nm D(0.5): 202 nm D(0.9): 273 nm

	Diam. (nm)	% Volume	Width (nm)
Z-Average (d.nm): 351.4	Peak 1: 206.5	100.0	43.05
Pdl: 0.553	Peak 2: 0.000	0.0	0.000
Intercept: 0.972	Peak 3: 0.000	0.0	0.000

Result quality : Refer to quality report

