



# J.K.K. MUNIRAJAH MEDICAL RESEARCH FOUNDATION

## ANNAI J.K.K. SAMPOORANI AMMAL COLLEGE OF PHARMACY

Ethirmedu, B. Komarapalayam-638 183, Namakkal Dist. Tamilnadu, India.

Approved by : Pharmacy Council of India. New Delhi & Affiliated to The Tamilnadu Dr. M.G.R Medical University, Chennai.

Website : [www.jkkmmrfpharmacy.edu.in](http://www.jkkmmrfpharmacy.edu.in) / E-Mail : [principal@jkkmmrfpharmacy.edu.in](mailto:principal@jkkmmrfpharmacy.edu.in)

Contact No : +919789456750, +919943066944, +919943069944.

**Dr.N. SENTHILKUMAR, M.Pharm., Ph.D.,**

**Principal**

DATE: 29/06/2022

### REPORT

ADDON COURSE TITLE -Emerging Approaches on Liposomal Drug Delivery and Their Benefits

VENUE-SEMINAR HALL

### RESOURCE PERSONS

**Dr.N.SENTHILKUMAR., M. PHARM, Ph.D.,**  
Professor, JKKMMRF'S Annai JKK sampoorani ammal  
College of pharmacy, komarapalayam.

**Dr.S. CHANDRA., M. PHARM, Ph.D.,**  
Professor, JKKMMRF'S Annai JKK sampoorani ammal  
College of pharmacy, komarapalayam.

**Dr. V. SURESH., M. PHARM, Ph.D.,**  
Professor, JKKMMRF'S Annai JKK sampoorani ammal  
College of pharmacy, komarapalayam.

**Mr. R. SURESH., M. PHARM.,**  
Professor, JKKMMRF'S Annai JKK sampoorani ammal  
College of pharmacy, komarapalayam.

No. of students enrolled: 70 No. of students certified:62 No. of Absentees:08

### OBJECTIVE OF THE COURSE

The objective of this topic is to explore the emerging approaches in liposomal drug delivery and to discuss the benefits of such approaches. The value-added course aims to provide an overview of the latest advancements in liposomal drug delivery, including the design and development of liposomal formulations and the incorporation of new techniques to enhance drug delivery efficacy, safety, and targeted delivery. The value-added course will also discuss the potential applications of liposomal drug delivery in various therapeutic areas and the future prospects of this technology.

**Note:Certificate will be issued only for the students attending more than Three days.**

### LEARNING OUTCOMES FROM THE COURSE

1. Describe the principles and mechanisms of liposomal drug delivery.
2. Identify the key challenges associated with traditional liposomal drug delivery and the benefits of emerging approaches.
3. Evaluate the latest advancements in liposomal drug delivery, including novel formulations and techniques for improving drug delivery efficacy, safety, and targeted delivery.
4. Analyze the potential applications of liposomal drug delivery in various therapeutic areas.
5. Critically assess the limitations and opportunities of liposomal drug delivery and its comparison to other drug delivery systems

HOD



PRINCIPAL

**Dr. N.SENTHILKUMAR,**  
PRINCIPAL,

JKK MUNIRAJAH MEDICAL RESEARCH FOUNDATION  
ANNAI JKK SAMPOORANI AMMAL COLLEGE OF PHARMACY,  
ETHIRMEDU, KOMARAPALAYAM - 638 183,  
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**Dr.N. SENTHILKUMAR, M.Pharm., Ph.D.,**  
**Principal**

REF.NO: JKKM/PHARM/CEU/REQ/2022/014

Date: 02/06/2022.

From

Department of Pharmaceutics,  
JKKMMRF'S Annai JKK Sampoorani Ammal College of Pharmacy.  
Komarapalayam, Namakkal [Dist]  
Tamil Nadu, PIN:638183.

To

The Principal,  
JKKMMRF'S Annai JKK Sampoorani Ammal College of Pharmacy.  
Komarapalayam, Namakkal [Dist]  
Tamil Nadu, PIN:638183.

Subject: **Letter for requesting Permission to Conduct an ADD ON COURSE regarding: -**

**Respected Sir,**

We are writing this letter to request permission to conduct a add on course in the **seminar hall** on **06/06/2022 to 29/06/2022**.we wish to conduct a add on course regarding the add on course on **Emerging Approaches on Liposomal Drug Delivery and Their Benefits**. We request you to kindly permit to conduct **ADD ON COURSE** program as this would be a great opportunity for students to and that would help a great deal to shape the students.

Looking forward to hearing from you.

Thank you,

**Dr. N.SENTHILKUMAR,**  
**PRINCIPAL**

**JKK MUNIRAJAH MEDICAL RESEARCH FOUNDATION  
ANNAI JKK SAMPOORANI AMMAL COLLEGE OF PHARMACY  
ETHIRMEDU, KOMARAPALAYAM - 638 183.  
NAMAKKAL DISTRICT. TAMILNADU. INDIA.**

**Yours sincerely**







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**Dr.N. SENTHILKUMAR, M.Pharm., Ph.D.,**

**Principal**

DATE: 03.06.2022

### CIRCULAR

This is informed to the **B. Pharm, M. Pharm & Pharm.D** Students that the following value-added course can be conducted by the Department of Pharmaceutics, **JKKMMRF'S ANNAI JKKSAMPOORANIAMMAL COLLEGE OF PHARMACY, KOMARAPALAYAM** and it will be commenced as per the schedule:

COURSE NAME	SCHEDULE	DURATION	VENUE	RESOURCE PERSON
Emerging Approaches on Liposomal Drug Delivery and Their Benefits.	06/06/2022 to 29/06/2022	30 HOURS	SEMINAR HALL	DR.N.SENTHILKUMAR DR.S.CHANDRA MR.R.SURESH DR.V.SURESH

All the above-mentioned students must enroll and actively participate in the course without fail.

**NOTE:** Certificates should be issued to all the students after completion of the course and examination.

HOD



Dr. N.SENTHILKUMAR,  
PRINCIPAL

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**Dr.N. SENTHILKUMAR, M.Pharm., Ph.D.,**

**Principal**

### SYLLABUS

Date: 29.06.2022

DATE	HOURS	TOPIC	SUB TOPICS	RESOURCE PERSON
20/06/2022	6 HOURS	<b>Emerging Approaches on Liposomal Drug Delivery and Their Benefits</b>	Principles and mechanisms of liposomal drug delivery	Dr.S.Chandra
			Key challenges associated with traditional liposomal drug delivery	Dr.N.Senthilkumar
23/06/2022	6 HOURS		Latest advancements in liposomal drug delivery, including novel formulations	Mr.R.Suresh
			Analyze the potential applications of liposomal drug delivery in various therapeutic areas	Dr.V.Suresh
24/06/2022	6 HOURS		Critically assess the limitations and opportunities of liposomal drug delivery	Dr.S.Chandra
			Develop a deeper understanding of the regulatory and ethical issues associated with liposomal drug delivery	Dr.N.Senthilkumar
27/06/2022	6 HOURS		Design and develop effective liposomal drug delivery strategies for various therapeutic areas.	Dr.S.Chandra
			Emerging approaches on liposomal drug delivery and their benefits in a scientific context	Dr.V.Suresh
29/06/2022	6 HOURS		Potential applications of liposomal drug delivery	Mr.R.Suresh
			Limitations of liposomal drug delivery	Dr.N.Senthilkumar
<b>Total hours = 30</b>				

HOD



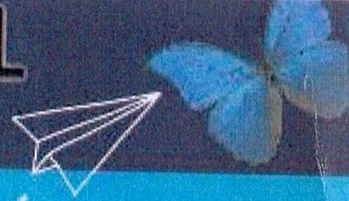
**Dr. N. SENTHILKUMAR,**  
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# JKKMMRF'S ANNAI JKK SAMPOORANIAMMAL COLLEGE OF PHARMACY, KOMARAPALAYAM



DEPARTMENT OF PHARMACEUTICS

COURSE TITLE

**Emerging Approaches on Liposomal Drug Delivery AND THEIR BENEFITS**

RESOURCE PERSONS

Dr.N.SENTHILKUMAR., M. PHARM, Ph.D.,  
Professor, JKKMMRF'S Annai JKK sampoorani ammal  
College of pharmacy, komarapalayam.

Dr. V. SURESH., M. PHARM, Ph.D.,  
Professor, JKKMMRF'S Annai JKK sampoorani ammal  
College of pharmacy, komarapalayam.

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Professor, JKKMMRF'S Annai JKK sampoorani ammal  
College of pharmacy, komarapalayam.

Mr. R. SURESH., M. PHARM.,  
Professor, JKKMMRF'S Annai JKK sampoorani ammal  
College of pharmacy, komarapalayam.



VENUE: SEMINAR HALL

DATE:06/06/2022

TO 29/06/2022

TIMING:09.30AM-04.30PM

## TOPICS

- principles and mechanisms of liposomal drug delivery
- key challenges associated with traditional liposomal drug delivery
- latest advancements in liposomal drug delivery, including novel formulations
- Analyze the potential applications of liposomal drug delivery in various therapeutic areas
- Critically assess the limitations and opportunities of liposomal drug delivery
- Gain a deeper understanding of the regulatory and ethical aspects associated with liposomal drug delivery
- Design and develop effective liposomal drug delivery strategies for various therapeutic areas.
- Emerging approaches on liposomal drug delivery and their benefits in a scientific context
- Potential applications of liposomal drug delivery
- Limitations of liposomal drug delivery



Dr. N.SENTHILKUMAR,  
PRINCIPAL,

JKK MUNIRAJAH MEDICAL RESEARCH FOUNDATION  
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**Dr.N. SENTHILKUMAR, M.Pharm., Ph.D.,**

**Principal**

ADD-ON COURSE TITLE : Emerging Approaches on Liposomal Drug Delivery and Their Benefits  
ACADEMIC YEAR : 2022-2023  
DATE : 06/06/2022 to 29/06/2022

### RESOURCE PERSON PROFILE



Name : Dr.N.Senthilkumar  
Designation : Professor & Principal  
Department : Pharmaceutical Chemistry  
Organization : JKK Munirajah Medical Research Foundation - Annai JKK Sampoorni Ammal College Of Pharmacy, Komarapalayam  
Phone Number : +91 - 9789456737  
Email Id : [senthilkumarjkk@gmail.com](mailto:senthilkumarjkk@gmail.com)  
Qualification : M.Pharm., Ph.D  
Experience : 28 Years.



Dr. N. SENTHILKUMAR,  
PRINCIPAL,  
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**Principal**

**ADD-ON COURSE TITLE** : Emerging Approaches on Liposomal Drug Delivery and Their Benefits  
**ACADEMIC YEAR** : 2022-2023  
**DATE** : 06/06/2022 to 29/06/2022

### RESOURCE PERSON PROFILE



Name : Dr. V. Suresh  
Designation : Professor & HOD  
Department : Pharmacology  
Organisation : JKK Munirajah Medical Research Foundation - Annai JKK Sampoorni Ammal College Of Pharmacy, Komarapalayam  
Phone Number : +91 - 9865610568  
Email Id : [velayuthamsuresh79@gmail.com](mailto:velayuthamsuresh79@gmail.com)  
Qualification : M.Pharm., Ph.D.,  
Experience : 18 Years



**Dr. N. SENTHILKUMAR,**  
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**ADD-ON COURSE TITLE** : Emerging Approaches on Liposomal Drug Delivery and Their Benefits.  
**ACADEMIC YEAR** : 2022-2023  
**DATE** : 06/06/2022 to 29/06/2022

### RESOURCE PERSON PROFILE



Name : Dr.S.Chandra  
Designation : Professor & HOD  
Department : Pharmaceutics  
Organization : JKK Munirajah Medical Research Foundation - Annai JKK Sampoorni Ammal College Of Pharmacy, Komarapalayam.  
Phone Number : +91-9655 95281  
Email Id : [chandrajkk@gmail.com](mailto:chandrajkk@gmail.com)  
Qualification : M.Pharm., Ph.D  
Experience : 18 Years



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ADD-ON COURSE TITLE : Emerging Approaches on Liposomal Drug Delivery and Their Benefits.  
ACADEMIC YEAR : 2022-2023  
DATE : 06/06/2022 to 29/06/2022

## RESOURCE PERSON PROFILE



*R. Suresh*

Name : Mr.R.Suresh.  
Designation : Associate Professor.  
Department : Pharmaceutics.  
Organization : JKK Munirajah Medical Research Foundation - Annai Jkk Sampoorni Ammal College Of Pharmacy, Komarapalayam.  
Phone Number : +91- 98650 84226.  
Email ID : suresh.krs20011@gmail.com.  
Qualification : M.Pharm.,Ph.D.,  
Experience :21 Years.



*[Signature]*  
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**Principal**

### ADD-ON COURSE ORGANISING FACULTY MEMBERS

DEPARTMENT	PHARMACEUTICS
ADD-ON COURSE NAME	Emerging approaches on Liposomal Drug Delivery and their Benefits
ACADEMIC YEAR	2022-2023
DATE	06/06/2022 To 29/06/2022

### LIST OF ADD-ON COURSE ORGANISING FACULTY MEMBERS

S.NO	NAME OF THE FACULTY	DESIGNATION
1.	Mr .R.Suresh	Associate professor
2.	Mrs.S.Sangeetha	Assistant professor
3.	Mrs.S.Kavibharathi	Assistant professor
4.	Mrs.P.Dhivyabharathi	Assistant professor

(Handwritten initials)

(Handwritten signature)



(Handwritten signature)  
Dr. N.SENTHILKUMAR,  
PRINCIPAL,

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**Principal**

### LIST OF STUDENTS ENROLLED FOR THE COURSE

ADDON COURSE TITLE-Emerging Approaches on Liposomal Drug Delivery and Their Benefits

S.NO	REG.NO	NAME OF THE STUDENT	COURSE	SIGNATURE
1	380020507501	ABIRAMI S	III-PHARM D	Abirami S
2	380020507502	AKESH S	III-PHARM D	Akesh S
3	380020507503	CHARANKUMAR C	III-PHARM D	Charankumar C
4	380020507504	DHANUSHKUMAR S	III-PHARM D	S Dhannushkumar
5	380020507505	EDWIN V REJI	III-PHARM D	Edwin Reji
6	380020507506	FALAHUDDHARAIN R	III-PHARM D	Falahudharain R
7	380020507507	GEHESH S V	III-PHARM D	Gehesh S.V
8	380020507508	GUNASEKAR M	III-PHARM D	Gunasekar M
9	380020507509	KALAIKARUNA K	III-PHARM D	Kalaikaruna K
10	380020507510	KARTHIKEYAN K	III-PHARM D	Karthikeyan K
11	560021507521	ESHA T	III-B.PHARM	Esha T
12	560021507522	GANANATHAN P	III-B.PHARM	Gananathan P
13	560021507523	GEONITH M	III-B.PHARM	Geonith M
14	560021507524	GIRINATH K	III-B.PHARM	Girinath K
15	560021507525	GOKUL V	III-B.PHARM	Gokul V
16	560021507527	GOPINATH K	III-B.PHARM	Gopinath K



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17	560021507528	GOPINATH S	III-B.PHARM	Gopinath S
18	560021507529	GOUTHAM S V	III-B.PHARM	Goutham S V
19	560021507530	GOWRISANKAR M	III-B.PHARM	M. Gump
20	560021507531	GUNASEKARAN V	III-B.PHARM	Gunasekaran V
21	560021507532	GURUPRASATTH S K	III-B.PHARM	Guruprasath S K
22	560021507533	HARI BHARATHI S	III-B.PHARM	Hari Bharathi S
23	560021507534	HARIDHARSHINI M	III-B.PHARM	Haridharshini M
24	560021507535	HEMA DIVYA R	III-B.PHARM	Hemadivya R
25	560021507536	HIRUTHIKA S	III-B.PHARM	Hiruthika S
26	560021507537	INDHUMATHI A	III-B.PHARM	Indhumathi A
27	560021507538	ISAIMOZHI M	III-B.PHARM	Isaimozhi M
28	560021507539	IYYAPPAN M	III-B.PHARM	Iyyappan M
29	560021507540	JAGATHISHVARAN P	III-B.PHARM	Jagathishvaran P
30	560021507541	JEEVA N R	III-B.PHARM	Jeeva N.R
31	560020507501	ABDUR RAHMAN M	V-B.PHARM	Abdur Rahman M
32	560020507502	ARAVINDHAN S	V-B.PHARM	Aravindhan S
33	560020507503	ARIVAZHAGAN A	V-B.PHARM	Arivalagan A
34	560020507504	ARULKUMAREN K K	V-B.PHARM	Arulkumaren K K
35	560020507505	ARULPRAKASH A	V-B.PHARM	Arulprakash A
36	560020507506	ARUN A	V-B.PHARM	A. Arun
37	560020507507	ASHA SANDHIYA A	V-B.PHARM	Ashasandhya A
38	560020507508	ASHOKKUMAR P	V-B.PHARM	Ashokkumar P
39	560020507509	AYYASAMY A	V-B.PHARM	Ayyasamy A



**Dr. N. SENTHILKUMAR,**  
**PRINCIPAL,**

JKK MUNIRAJAH MEDICAL RESEARCH FOUNDATION  
ANNAI JKK SAMPOORANI AMMAL COLLEGE OF PHARMACY,  
ETHIRMEDU, KOMARAPALAYAM - 638 183,  
NAMAKKAL DISTRICT, TAMILNADU.





# J.K.K. MUNIRAJAH MEDICAL RESEARCH FOUNDATION

## ANNAI J.K.K. SAMPOORANI AMMAL COLLEGE OF PHARMACY

Ethirmedi, B. Komarapalayam-638 183, Namakkal Dist. Tamilnadu, India.

Approved by : Pharmacy Council of India, New Delhi & Affiliated to The Tamilnadu Dr. M.G.R Medical University, Chennai.

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Contact No : +919789456750, +919943066944, +919943069944.

**Dr.N. SENTHILKUMAR, M.Pharm., Ph.D.,**

**Principal**

40	560020507510	BALA S	V-B.PHARM	Bala S
41	560020507511	BALAJI B	V-B.PHARM	B. Balaji
42	560020507512	BERGIN G	V-B.PHARM	G. Bergin
43	560020507513	BHARANIDHARAN S	V-B.PHARM	Bh. S
44	560020507514	BHARATHVAJ S	V-B.PHARM	Bharath. R.
45	560020507515	BHUVANESHWARAN R	V-B.PHARM	Bhuvanesh. R.
46	560020507516	BOOPALAN S	V-B.PHARM	Boopalan S
47	560020507517	CHANDEESH S	V-B.PHARM	Chandee. S
48	560020507518	DEVANDHIRAN K	V-B.PHARM	Dev. K
49	560020507519	DHANASEKAR U	V-B.PHARM	Dhanasek. U
50	560020507520	DHANUSH S	V-B.PHARM	Dhanush S
51	560020507521	DHAYANANTHAN V	V-B.PHARM	Dhayananth. V
52	560020507522	DINESH K	V-B.PHARM	D. K
53	560020507523	DINESH M	V-B.PHARM	D. M
54	MPY/929/2022	CHANDRU D	I-M PHARM (PHARMACEUTICS)	Chandru D
55	MPY/930/2022	GOWTHAM M	I-M PHARM (PHARMACEUTICS)	Gowtham M
56	MPY/931/2022	KALAIYARASI R	I-M PHARM (PHARMACEUTICS)	Kalaiyarasi R
57	MPY/932/2022	KOTHAI S	I-M PHARM (PHARMACEUTICS)	K. S
58	MPY/933/2022	MANI BHARATHI P	I-M PHARM (PHARMACEUTICS)	Mani. P
59	MPY/934/2022	MOHAMMED AABITH M	I-M PHARM (PHARMACEUTICS)	Mohammed Aabith M
60	MPY/935/2022	MOHANA KANNAN M	I-M PHARM (PHARMACEUTICS)	Mohana Kannan M
61	MPY/936/2022	NAVEEN KUMAR M	I-M PHARM (PHARMACEUTICS)	Naveen Kumar M
62	MPY/937/2022	PRASANTH R	I-M PHARM (PHARMACEUTICS)	Prasanth R



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**Principal**

63	261521507501	AMARNATH A	II-M PHARM (PHARMACY PRACTICE)	<i>Amnath</i>
64	261521507502	BALA GURU I T	II-M PHARM (PHARMACY PRACTICE)	<i>Bugbug</i>
65	261521507503	ELAVARASI K	II-M PHARM (PHARMACY PRACTICE)	<i>Elavasi</i>
66	261521507504	ESWARAN N P	II-M PHARM (PHARMACY PRACTICE)	<i>Eswaran</i>
67	261521507505	HEMANANDHINI H	II-M PHARM (PHARMACY PRACTICE)	<i>Hemanandhini</i>
68	261521507506	MEENADEV I V	II-M PHARM (PHARMACY PRACTICE)	<i>Meenadi</i>
69	261521507507	MOHAMED ASIF RAHMAN M	II-M PHARM (PHARMACY PRACTICE)	<i>Mohamed Asif Rahman</i>
70	261521507508	MUHAMMAD O	II-M PHARM (PHARMACY PRACTICE)	<i>Muhammad O</i>



*[Signature]*  
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### STUDENTS ATTENDANCE

ADDON COURSE TITLE-Emerging Approaches on Liposomal Drug Delivery and Their Benefits

S.NO	REG.NO	NAME OF THE STUDENT	COURSE	20/06	23/06	24/06	27/06	29/06
1	380020507501	ABIRAMI S	III-PHARM D	/	/	/	/	/
2	380020507502	AKESH S	III-PHARM D	/	/	/	/	/
3	380020507503	CHARANKUMAR C	III-PHARM D	/	/	/	/	/
4	380020507504	DHANUSHKUMAR S	III-PHARM D	/	/	/	/	/
5	380020507505	EDWIN V REJI	III-PHARM D	/	/	/	/	/
6	380020507506	FALAHUDDHARAIN R	III-PHARM D	/	/	/	/	/
7	380020507507	GEHESH S V	III-PHARM D	/	/	/	/	/
8	380020507508	GUNASEKAR M	III-PHARM D	/	Ab	Ab	Ab	Ab
9	380020507509	KALAIKARUNA K	III-PHARM D	/	/	/	/	/
10	380020507510	KARTHIKEYAN K	III-PHARM D	/	/	/	/	/
11	560021507521	ESHA T	III-B.PHARM	/	/	/	/	/
12	560021507522	GANANATHAN P	III-B.PHARM	/	/	/	/	/
13	560021507523	GEONITH M	III-B.PHARM	/	/	/	/	/
14	560021507524	GIRINATH K	III-B.PHARM	/	/	/	/	/
15	560021507525	GOKUL V	III-B.PHARM	/	/	/	/	/
16	560021507527	GOPINATH K	III-B.PHARM	/	/	/	/	/
17	560021507528	GOPINATH S	III-B.PHARM	/	/	/	/	/
18	560021507529	GOUTHAM S V	III-B.PHARM	/	/	/	/	/
19	560021507530	GOWRISANKAR M	III-B.PHARM	/	/	/	/	/
20	560021507531	GUNASEKARAN V	III-B.PHARM	/	/	Ab	Ab	Ab
21	560021507532	GURUPRASATTH S K	III-B.PHARM	/	Ab	/	Ab	Ab
22	560021507533	HARI BHARATHI S	III-B.PHARM	/	/	/	/	/
23	560021507534	HARIDHARSHINI M	III-B.PHARM	/	/	/	/	/
24	560021507535	HEMA DIVYA R	III-B.PHARM	/	/	/	/	/
25	560021507536	HIRUTHIKA S	III-B.PHARM	/	/	/	/	/
26	560021507537	INDHUMATHI A	III-B.PHARM	/	/	/	/	/
27	560021507538	ISAIMOZHI M	III-B.PHARM	/	/	/	/	/
28	560021507539	IYYAPPAN M	III-B.PHARM	/	/	/	/	/
29	560021507540	JAGATHISHVARAN P	III-B.PHARM	/	/	/	/	/
30	560021507541	JEEVA N R	III-B.PHARM	/	Ab	Ab	/	Ab
31	560020507501	ABDUR RAHMAN M	V-B.PHARM	/	/	/	/	/
32	560020507502	ARAVINDHAN S	V-B.PHARM	/	/	/	/	/
33	560020507503	ARIVAZHAGAN A	V-B.PHARM	/	/	/	/	/
34	560020507504	ARULKUMAREN K K	V-B.PHARM	/	/	/	/	/
35	560020507505	ARULPRAKASH A	V-B.PHARM	/	/	/	/	/
36	560020507506	ARUN A	V-B.PHARM	/	/	/	/	/
37	560020507507	ASHA SANDHIYA A	V-B.PHARM	/	/	/	/	/
38	560020507508	ASHOKKUMAR P	V-B.PHARM	Ab	Ab	Ab	Ab	Ab
39	560020507509	AYYASAMY A	V-B.PHARM	/	/	/	/	/



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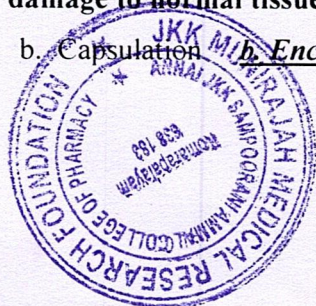
### ADD-ON COURSE- ANSWER KEY


ADD-ON COURSE NAME	Emerging Approaches on Liposomal Drug Delivery and Their Benefits	
DATE		
NAME OF THE STUDENT		
REGISTER NO		
COURSE/YEAR/SEM		MARKS OBTAINED:
SIGNATURE	STUDENT:	STAFF:

Duration: 01:00 Hour

Maximum Marks:2X25=50

- ..... is a life-threatening disease contributing to ~3.4 million deaths worldwide  
a. Cancer    **b. HIV**    c. Asthma    d. Diabetes
- Liposomal vesicles vary in size between.....  
**a. 0.0025  $\mu$ m to 2.25  $\mu$ m**    b. 0.0035  $\mu$ m to 3.25  $\mu$ m    c. 0.0024  $\mu$ m to 0.758  $\mu$ m  
d. 0.025  $\mu$ m to 2.5  $\mu$ m
- what are the main building blocks of liposomes.  
a. Lipoproteins    **b. Phospholipids**    c. Biomolecules    d. Lipids
- what is the most common and well-investigated nanocarriers for targeted drug delivery.  
b. Chromosomes    b. Bacteria    **c. Liposomes**    d. Virus
- The width of the tight junctional regions between endothelial cells *in vivo* has been reported to range from  
a. 12 to 20 nm    b. 34 to 45 nm    **c. 12 to 25 nm**    d. 10 to 12 nm
- The following of the chemotherapeutic drug in liposomes can limit drug-mediated damage to normal tissues thus improves its therapeutic potency.  
b. Capsulation    **b. Encapsulation**    c. Coated    d. Encased



  
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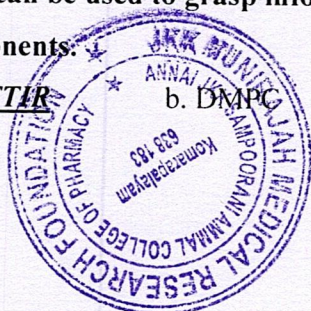
7. Protection of drugs from degradation and clearance, superior therapeutic effects, and side effects.  
a. Higher    b. Moderate    c. Lower    d. Over
8. The size of liposomes ranges from..... nm to the micrometer scale.  
a. 20    b. 60    c. 30    d. 95.
9. Doxorubicin HCl liposome injection was the first liposomal product approved by the FDA in  
a. 1947    b. 1985    c. 1960    d. 1995
10. Which is a highly effective chemotherapeutic agent against epithelial cancers.  
a. Cisplatin    b. Triz    c. Cetrizine    d. Aspirin.
11. TECHNOLOGY is being advanced and more targeted treatment approach to cure various diseases, including dreadful disease cancer  
a. Biotechnology    b. Genetic Engineering    c. Nanotechnology    d. cloning
12. which are deemed to be responsible for relapse of cancers after treatment, have been cultured successfully as spheroids.  
a. Cancer stem cells    b. Epithelial cells    c. Cloned cells    d. Hybrid cells
13. In DLS experiments, it is assumed that the nanomaterial is.....  
a. Circular    b. Spherical    c. Cubical    d. Cylindrical
14. Following spectroscopy is a long-established analytical technique used for the characterization of a wide array of nano systems and materials  
a. Ultra Visible    b. X-Ray    c. Infrared    d. Visible
15. which can be used to grasp information about lipid composition, interactions between components.

a. FTIR

b. DMPC

c. DSPC

d. NSAID



  
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16. ....is the application of nanotechnology to the discipline of medicine.  
a. Biomedicine      b. Clinical medicine      c. Nutraceuticals      d. Nanomedicine
17. ....liposomal formulations that are intended for clinical use should possess some basic properties, such as small particle size distribution.  
a. Intramuscular      b. Intravenous      c. Subcutaneous      d. Oral.
18. The size distribution of liposomes is measured using dynamic light  
a. Refraction      b. Reflection      c. Scattering      d. Diffraction.
19. Cancer is a life-threatening disease contributing to deaths worldwide.  
a. ~3.4 million      b. ~4.4 million      c. ~2.4 million      d. ~5.3 million
20. Most of the active pharmaceutical ingredients (APIs) used in chemotherapy are highly cytotoxic to .....  
a. Cancer cells      b. Normal cells      c. Both(a) & (b)      d. None of the above
21. ....agents are typically administered to the patients to cancer cells.  
a. Antiasthma      b. Antituberculosis      c. Antimalarial      d. Anticancer
22. ....is another strategic component of liposomes.  
a. Cholesterol      b. Glucose      c. Sucrose      d. Insulin
23. .... liposomes are positively charged liposomes which interact with the negatively charged DNA molecules to form a stable complex.  
a. Cationic      b. Anionic      c. Amphoteric      d. Neutral
24. Endosomes normally have an inner pH of .....  
a. 7.5      b. 1.8      c. 0.7      d. 6.5
25. A liposome consists of a region of aqueous solution in which membrane.  
a. Hydrophobic      b. Hydrophilic      c. Heterophilic      d. Neutrophilic



  
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MARK STATEMENT

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2	380020507502	AKESH S	III-PHARM D	38	76
3	380020507503	CHARANKUMAR C	III-PHARM D	46	92
4	380020507504	DHANUSHKUMAR S	III-PHARM D	38	76
5	380020507505	EDWIN V REJI	III-PHARM D	46	92
6	380020507506	FALAHUDDHARAIN R	III-PHARM D	44	88
7	380020507507	GEHESH S V	III-PHARM D	42	84
8	380020507508	GUNASEKAR M	III-PHARM D	A	A
9	380020507509	KALAIKARUNA K	III-PHARM D	44	88
10	380020507510	KARTHIKEYAN K	III-PHARM D	42	84
11	560021507521	ESHA T	III-B.PHARM	42	84
12	560021507522	GANANATHAN P	III-B.PHARM	38	76
13	560021507523	GEONITH M	III-B.PHARM	48	96
14	560021507524	GIRINATH K	III-B.PHARM	46	92
15	560021507525	GOKUL V	III-B.PHARM	38	76
16	560021507527	GOPINATH K	III-B.PHARM	46	92
17	560021507528	GOPINATH S	III-B.PHARM	42	84
18	560021507529	GOUTHAM S V	III-B.PHARM	46	92
19	560021507530	GOWRISANKAR M	III-B.PHARM	42	84
20	560021507531	GUNASEKARAN V	III-B.PHARM	A	A
21	560021507532	GURUPRASATTH S K	III-B.PHARM	A	A
22	560021507533	HARI BHARATHI S	III-B.PHARM	45	90
23	560021507534	HARIDHARSHINI M	III-B.PHARM	48	96
24	560021507535	HEMA DIVYA R	III-B.PHARM	32	64
25	560021507536	HIRUTHIKA S	III-B.PHARM	48	96
26	560021507537	INDHUMATHI A	III-B.PHARM	32	64
27	560021507538	ISAIMOZHI M	III-B.PHARM	44	88
28	560021507539	IYYAPPAN M	III-B.PHARM	34	66
29	560021507540	JAGATHISHVARAN P	III-B.PHARM	42	84
30	560021507541	JEEVA N R	III-B.PHARM	A	A
31	560020507501	ABDUR RAHMAN M	V-B.PHARM	42	84
32	560020507502	ARAVINDHAN S	V-B.PHARM	48	96
33	560020507503	ARIVAZHAGAN A	V-B.PHARM	32	64
34	560020507504	ARULKUMAREN K K	V-B.PHARM	45	90
35	560020507505	ARULPRAKASH A	V-B.PHARM	46	92
36	560020507506	ARUN A	V-B.PHARM	36	72
37	560020507507	ASHA SANDHIYA A	V-B.PHARM	42	84



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32	560020507502	ARAVINDHAN S	V-B.PHARM	48	96
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36	560020507506	ARUN A	V-B.PHARM	36	72
37	560020507507	ASHA SANDHIYA A	V-B.PHARM	42	84
38	560020507508	ASHOKKUMAR P	V-B.PHARM	A	A
39	560020507509	AYYASAMY A	V-B.PHARM	44	88
40	560020507510	BALA S	V-B.PHARM	38	76
41	560020507511	BALAJI B	V-B.PHARM	47	94
42	560020507512	BERGIN G	V-B.PHARM	48	96
43	560020507513	BHARANIDHARAN S	V-B.PHARM	A	A
44	560020507514	BHARATHVAAJ S	V-B.PHARM	38	76
45	560020507515	BHUVANESHWARAN R	V-B.PHARM	44	88
46	560020507516	BOOPALAN S	V-B.PHARM	44	88
47	560020507517	CHANDEESH S	V-B.PHARM	36	72
48	560020507518	DEVANDHIRAN K	V-B.PHARM	38	76
49	560020507519	DHANASEKAR U	V-B.PHARM	42	84
50	560020507520	DHANUSH S	V-B.PHARM	38	76
51	560020507521	DHAYANANTHAN V	V-B.PHARM	36	72
52	560020507522	DINESH K	V-B.PHARM	A	A
53	560020507523	DINESH M	V-B.PHARM	36	72
54	MPY/929/2022	CHANDRU D	I-M PHARM (PHARMACEUTICS)	48	96
55	MPY/930/2022	GOWTHAM M	I-M PHARM (PHARMACEUTICS)	A	A
56	MPY/931/2022	KALAIYARASI R	I-M PHARM (PHARMACEUTICS)	44	88
57	MPY/932/2022	KOTHAI S	I-M PHARM (PHARMACEUTICS)	38	76
58	MPY/933/2022	MANI BHARATHI P	I-M PHARM (PHARMACEUTICS)	36	72
59	MPY/934/2022	MOHAMMED AABITH M	I-M PHARM (PHARMACEUTICS)	44	88
60	MPY/935/2022	MOHANA KANNAN M	I-M PHARM (PHARMACEUTICS)	42	84
61	MPY/936/2022	NAVEEN KUMAR M	I-M PHARM (PHARMACEUTICS)	36	72
62	MPY/937/2022	PRASANTH R	I-M PHARM (PHARMACEUTICS)	42	84
63	261521507501	AMARNATH A	II-M PHARM (PHARMACY PRACTICE)	48	96
64	261521507502	BALA GURU I T	II-M PHARM (PHARMACY PRACTICE)	42	84
65	261521507503	ELAVARASI K	II-M PHARM (PHARMACY PRACTICE)	44	88
66	261521507504	ESWARAN N P	II-M PHARM (PHARMACY PRACTICE)	38	76
67	261521507505	HEMANANDHINI H	II-M PHARM (PHARMACY PRACTICE)	46	92
68	261521507506	MEENADEVI V	II-M PHARM (PHARMACY PRACTICE)	38	76
69	261521507507	MOHAMED ASIF RAHMAN M	II-M PHARM (PHARMACY PRACTICE)	32	64
70	261521507508	MUHAMMAD O	II-M PHARM (PHARMACY PRACTICE)	42	84

A=Absent



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### ADD-ON COURSE - STUDENT ANSWER SHEET

ADD-ON COURSE NAME	Emerging Approaches on Liposomal Drug Delivery and Their Benefits	
DATE	29/06/2022	
NAME OF THE STUDENT	Amarnath. A.	
REGISTER NO	261521507501	
COURSE/YEAR/SEM	II M.pharm (Pharmacy Practice)	MARKS OBTAINED: 48
SIGNATURE	STUDENT: <u>Amarnath</u>	STAFF: <u>P. Senthil Kumar</u>

Duration: 01:00 Hour

Maximum Marks: 2X25= 50

- ..... is a life-threatening disease contributing to ~3.4 million deaths worldwide.
  - Cancer
  - HIV
  - Asthma
  - Diabetes
- Liposomal vesicles vary in size between.....
  - 0.0025  $\mu\text{m}$  to 2.25  $\mu\text{m}$
  - 0.0035  $\mu\text{m}$  to 3.25  $\mu\text{m}$
  - 0.0024  $\mu\text{m}$  to 0.758  $\mu\text{m}$
  - 0.025  $\mu\text{m}$  to 2.5  $\mu\text{m}$
- what are the main building blocks of liposomes.
  - Lipoproteins
  - Phospholipids
  - Biomolecules
  - Lipids
- what is the most common and well-investigated nanocarriers for targeted drug delivery.
  - Chromosomes
  - Bacteria
  - Liposomes
  - Virus
- The width of the tight junctional regions between endothelial cells *in vivo* has been reported to range from
  - 12 to 20 nm
  - 34 to 45 nm
  - 12 to 25 nm
  - 10 to 12 nm
- The following of the chemotherapeutic drug in liposomes can limit drug-mediated damage to normal tissues thus improves its therapeutic potency.
  - Capsulation
  - Encapsulation
  - Coated
  - Encased



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7. Protection of drugs from degradation and clearance, superior therapeutic effects, and side effects.  
a. Higher    b. Moderate     c. Lower    d. Over
8. The size of liposomes ranges from..... nm to the micrometer scale.  
a.20     b.60    c.30    d.95.
9. Doxorubicin HCl liposome injection was the first liposomal product approved by the FDA in  
a.1947    b.1985    c.1960     d.1995
10. Which is a highly effective chemotherapeutic agent against epithelial cancers.  
a. Cisplatin    b. Triz     c. Cetrizine    d. Aspirin.
11. TECHNOLOGY is being advanced and more targeted treatment approach to cure various diseases, including dreadful disease cancer  
a. Biotechnology    b. Genetic Engineering     c. Nanotechnology    cloning
12. which are deemed to be responsible for relapse of cancers after treatment, have been cultured successfully as spheroids.  
 a. Cancer stem cells    b. Epithelial cells    c. Cloned cells    d. Hybrid cells
13. In DLS experiments, it is assumed that the nanomaterial is.....  
a. Circular     b. Spherical    c. Cubical    d. Cylindrical
14. Following spectroscopy is a long-established analytical technique used for the characterization of a wide array of nano systems and materials  
a. Ultra Visible    b. X-Ray     c. Infrared    d. Visible
15. which can be used to grasp information about lipid composition, interactions between components



a. FTIR

b. DMPC

c. DSPC

d. NSAID

  
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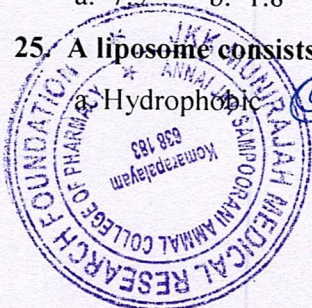
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16. ....is the application of nanotechnology to the discipline of medicine.  
a. Biomedicine      b. Clinical medicine      c. Nutraceuticals       d. Nanomedicine
17. ....liposomal formulations that are intended for clinical use should possess some basic properties, such as small particle size distribution.  
a. Intramuscular       b. Intravenous      c. Subcutaneous      d. Oral.
18. The size distribution of liposomes is measured using dynamic light  
a. Refraction      b. Reflection       c. Scattering      d. Diffraction.
19. Cancer is a life-threatening disease contributing to deaths worldwide.  
 a. ~3.4 million      b. ~4.4 million      c. ~2.4 million      d. ~5.3 million
20. Most of the active pharmaceutical ingredients (APIs) used in chemotherapy are highly cytotoxic to .....  
a. Cancer cells      b. Normal cells       c. Both(a) & (b)      d. None of the above
21. ....agents are typically administered to the patients to cancer cells.  
a. Antiasthma      b. Antituberculosis      c. Antimalarial       d. Anticancer
22. ....is another strategic component of liposomes.  
 a. Cholesterol      b. Glucose      c. Sucrose      d. Insulin
23. .... liposomes are positively charged liposomes which interact with the negatively charged DNA molecules to form a stable complex.  
 a. Cationic      b. Anionic      c. Amphoteric      d. Neutral
24. Endosomes normally have an inner pH of .....  
a. 7.5      b. 1.8      c. 0.7       d. 6.5
25. A liposome consists of a region of aqueous solution in which membrane.  
a. Hydrophobic       b. Hydrophilic      c. Heterophilic      d. Neutrophilic



  
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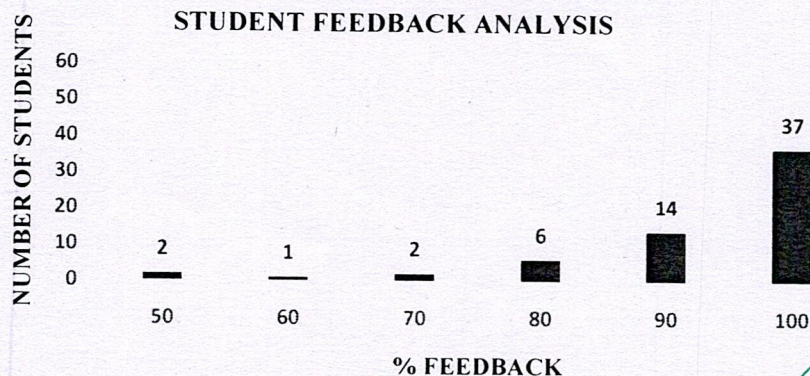
### REPORT SUMMARY

Date: 29/06/2022

Academic year	2022-2023
Add on course title	Emerging Approaches on Liposomal Drug Delivery and Their Benefits
Date	06/06/2022 to 29/06/2022
Duration of the Course	30 Hours
Total participants Enrolled	70
Successfully Completed	62
No. of Absentees	08
Type of Assessment	Multiple Choice Questions (MCQ's)
Course Outcome	<ul style="list-style-type: none"><li>Analyze the potential applications of liposomal drug delivery in various therapeutic areas.</li><li>Critically assess the limitations and opportunities of liposomal drug delivery and its comparison to other drug delivery systems</li></ul>
Outcome Attainment	40 Students scored more than 80% of marks - Attainment level 3 Achieved

### Feedback Question Analysis – Question Asked-Feedback Rating

- 1.Satisfaction
- 2.Clarity
3. Percentage of the information was new
- 4.Informative
- 5.Technical issues
- 6.Like to learn more about this topic
- 7.Rate the content of the slides/virtual aid
- 8.Accuracy of the sessions
- 9.Session expectations
- 10.Rate the content of the seminar



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## PHOTOGRAPHS

**ADD-ON COURSE TITLE**

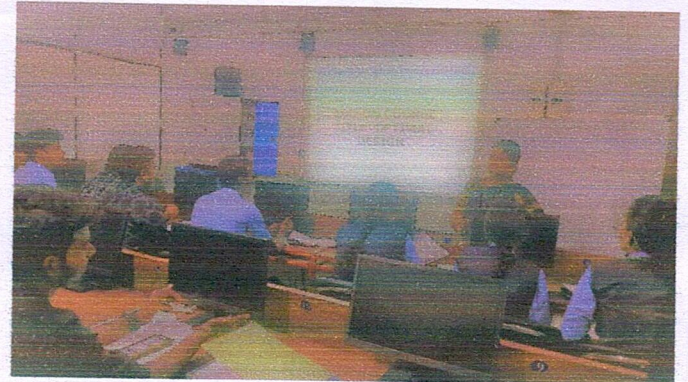
**:Emerging Approaches on Liposomal Drug Delivery and Their Benefits**

**ACADEMIC YEAR**

**:2022-2023**

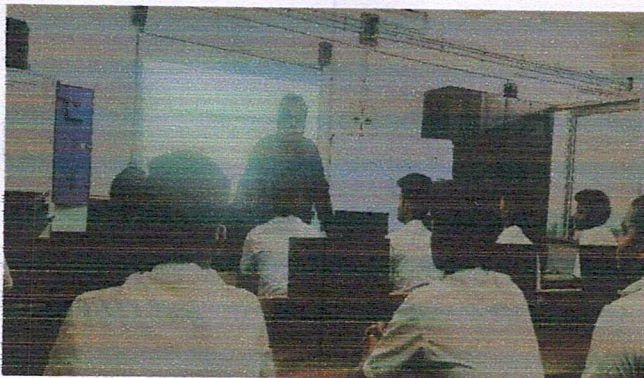
**DATE**

**:06/06/2022 to 29/06/2022**



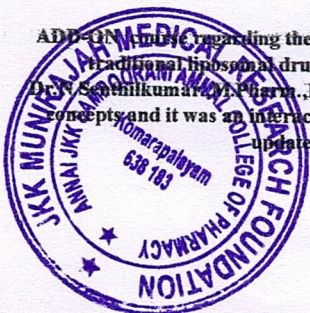
ADD-ON course regarding the topic latest advancements in liposomal drug delivery, including novel formulations speech delivered by Mr.R.Suresh.,M.Pharm.,students able to understand the concepts and it was an interactive session,this would be helpful to update knowledge.

ADD-ON course regarding the topic principles and mechanisms of liposomal drug delivery speech delivered by Dr.S.Chandra.,M.Pharm.,PhD., students able to understand the concepts and it was an interactive session,this would be helpful to update knowledge



ADD-ON course regarding the topic key challenges associated with liposomal drug delivery speech delivered by Dr.N.Senthilkumar.,M.Pharm.,PhD., students able to understand the concepts and it was an interactive session,this would be helpful to update knowledge.

ADD-ON course regarding the topic Emerging approaches on liposomal drug delivery and their benefits in a scientific context speech delivered by Dr.V.Suresh.,M.Pharm.,PhD., students able to understand the concepts and it was an interactive session,this would be helpful to update knowledge.



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**JKKMMRF'S ANNAI JKK SAMPOORANIAMMAL  
COLLEGE OF PHARMACY, KOMARAPALAYAM**



**VALUE ADDED COURSE**

**ORGANIZED BY  
DEPARTMENT OF PHARMACEUTICS**



**CERTIFICATE OF PARTICIPANT**

KOTHAI.S

HAS APPRECIATED FOR HIS/HER PARTICIPATION IN VALUE ADDED COURSE ON  
EMERGING APPROACHES ON LIPOSOMAL DRUG DELIVERY AND THEIR BENEFITS

**06/06/2022 TO 29/06/2022**

**COORDINATOR**

**H.O.D**

**PRINCIPAL**

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