M M CH SEKHAR JAGGARAPU

c/o Laboratory of Dr Rajkumar Banerjee,
Senior principal scientist,
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Fields of interest: Liposomes, self-assemblies, carbon nanospheres, cancer biology, targeted drug and gene delivery systems.

ACADEMICS

Indian Institute of Chemical Technology		2013-present
(Ph.D in Chemical sciences)		Hyderabad, India.
Andhra University		2009-2011
(M.Sc.Chemistry)	(grade : 67.9%)	Visakhapatnam, India.
Nova Degree college		2006-2009
(B.Sc-Bio-technology)	(grade : 63.6%)	Vegavaaram, India.
Triveni Junior college		2004-2006
Intermediate (Bi.P.C)	(grade : 74.7%)	Jangareddygudem, India.
Lalitha sai public school		2003-2004
Secondary school certificate	(grade : 75.6%)	Jangareddygudem, India.

RESEARCH EXPERIENCE

1. Neuropsychotic drug based-glucose nanospheric bioconjugate for effective orthotopic glioma treatment. **(Ph.D. thesis).**
2. Development of mannose derived carbon nanospheres for targeting mannose receptors expressing cancer and immune cells. **(Ph.D. thesis).**
3. NGRKC16-lipopeptide assisted liposomal-withaferin delivery for efficient killing of CD13 receptor-expressing pancreatic cancer and angiogenic endothelial cells. **(Ph.D. thesis).**
4. Cationic lipid-conjugated hydrocortisone as selective antitumor agent. **(As a Junior Research Fellow).**

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PUBLICATIONS

Published articles

1. **Madhan Mohan Chandra Sekhar Jaggarapu***, Hari Krishnareddy Rachamalla, Narendra Varma Nimmu, Rajkumar Banerjee*, NGRKC16-lipopeptide assisted liposomal-withaferin delivery for efficient killing of CD13 receptor-expressing pancreatic cancer and angiogenic endothelial cells, ***Journal of Drug Delivery Science and Technology***, volume 58, 2020, pp. 1-12

2. Soumen Saha*,[#] Venu Yakati [#], Gajji Shankar, **Madhan Mohan Chandra Sekhar Jaggarapu**, Gopikrishna Moku, Kuncha Madhusudana, Rajkumar Banerjee, Sistla Ramkrishna, Ragampeta Srinivas and Arabinda Chaudhuri*, Amphetamine decorated cationic lipid nanoparticles cross the blood–brain barrier: therapeutic promise for combating glioblastoma, ***Journal of materials chemistry B***, 2020. **(#Equal contribution).**

3. Chandra Kumar Elechalawar[#], Dwaipayan Bhattacharya[#], Mohammed Tanveer Ahmed, Halley Gora, Kathyayani Sridharan, Piyush Chaturbedy, Sarmistha Halder Sinha, **Madhan Mohan Chandra Sekhar Jaggarapu**, Kumar Pranav Narayan, Sumana Chakravarty, Muthusamy Eswaramoorthy, Tapas Kumar Kundu, Rajkumar Banerjee*, Dual targeting of folate receptor-expressing glioma tumor-associated macrophages and epithelial cells in the brain using a carbon nanosphere–cationic folate nanoconjugate, ***Nanoscale Advances,*** volume 1, 2019, pp. 3555-3567. **(#Equal contribution).**

4. Rachamalla, H.K [#]., Mondal, S.K [#]., Deshpande, S.S., Sridharan, K., Javaji, K., **Madhan Mohan Chandra Sekhar Jaggarapu,** Jinka, S, Bollu, V., Misra, S. and Rajkumar Banerjee*, Efficient anti-tumor nano-lipoplexes with unsaturated or saturated lipid induce differential genotoxic effects in mice. ***Nanotoxicology,*** 2019, pp.1-24. **(#Equal contribution).**

5. Bhowmira Rathore, **Madhan Mohan Chandra Sekhar Jaggarapu**, Anirban Ganguly, Hari Krishna Reddy Rachamalla, Rajkumar Banerjee*, Cationic lipid-conjugated hydrocortisone as selective antitumor agent, ***European Journal of Medicinal Chemistry***, Volume 108, *2016*, pp. 309-321.

Manuscripts under review

1. Rachamalla, H.K, Santanu, B,Ajaz A, Kathyayani S, Vijay S. M, Enfeng W, Shamit K. D, Basit L. J, Sudhakar J, **Madhan Mohan Chandra Sekhar Jaggarapu**, Venu Y, Debabrata M[*], Khalid M.A *, Rajkumar Banerjee*, Pharmacokinetic evaluation and anti-pancreatic tumor efficacy of liposomal thymoquinone. (Under revision).

Manuscripts under preparation

1. **Madhan Mohan Chandra Sekhar Jaggarapu,** Tejaswi Somarowthu, Rajkumar Banerjee*, A rapid, one step production of mannose nanospheres for dendritic cell precision targeting. (Manuscript ready for submission)

2. Jinka, S.,[#] Rachamalla, H.K.,[#] Battacharya, T., **Madhan Mohan Chandra Sekhar Jaggarapu,**, Sridharan, K., Yakati, V., and Banerjee, R., 2020. Glucocorticoid receptor dependent targeted delivery of ESC8 and anti-Hsp90 gene as combinatorial therapy for the treatment of colon cancer. **(#Equal contribution).**

3. Jinka, S., [#] Yousuf, M., [#] **Rachamalla**, H.K., Sridharan, K., **Madhan Mohan Chandra Sekhar Jaggarapu** and Banerjee, R., 2020. ES-TPP, an anticancer small molecule against oestrogen receptor overexpressing cancers. **(#Equal contribution).**

4. Kathyayani Sridharan,[#] Bhowmira Rathore,[#] Md Yousuf, Hari K Rachamalla, Sudhakar Jinka, **Madhan Mohan Chandra Sekhar Jaggarapu**, Rajkumar Banerjee, Systemic potential of engineered hydrocortisone-based selfassembly as glucocorticoid receptor-targeted multi-modal, anti-colon cancer therapeutics. **(#Equal contribution).**

Patents

1. **Madhan Mohan Chandra Sekhar Jaggarapu**, Sudhakar Jinka, Kathyayani Sridharan, Venu Yakati, Narendra Varma Nimmu, Namita Mahadik, Muthuswamy Eswaramoorthy, Tapas K. Kundu, Rajkumar Banerjee*, Neuropsychotic drug based-glucose nanospheric bioconjugate for effective orthotopic glioma treatment. **(patent to be submitted soon).**

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CONFERENCES

- Presented **poster** entitled "Dual targeting of folate receptor-expressing glioma tumor-associated macrophages and epithelial cells in the brain using a carbon nanosphere–cationic folate nanoconjugate" in ICBS-2019, Nov 2-4, 8th annual conference held at Indian Institute of Chemical Technology, Hyderabad, India.
- Participated in international conference on Advances in Chemical Biology and Biologics (ICACB-2019), Feb 28- Mar 2, 2019 in CSIR- Indian Institute of Chemical Technology, Hyderabad, India.
- Participated in Indo – US Bilateral symposium on Nanotechnology & Regulatory Science (February 21- 22, 2018).
- Presented a **poster** entitled "Cationic lipid-conjugated hydrocortisone as selective antitumor agent in ISCBDD-2016 conference held at Kolkata, India.
- Participated in international symposium on International Conference on Chemical Biology (ICCB-2014), February 6-8, 2014 in CSIR- Indian Institute of Chemical Technology, Hyderabad, India.

AWARDS AND ACCOMPLISHMENTS

- CSIR-Senior Research Fellowship (SRF) for the year 2016-2018.
- CSIR-Junior Research Fellowship (JRF) for the year 2014-2015.
- Secured 49th rank in National level entrance examination for CSIR for the year 2013.
- **Submitted PhD thesis in June-2020.**

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EXPERTISE

CHEMISTRY: Multi-step synthesis, purification & spectral characterizations of organic molecules such as cationic amphiphiles, peptides, column chromatography and thin layer chromatography.

NANOTECHNOLOGY: nanoparticle synthesis and characterizations like FE-SEM, FT-IR, XRD, RAMAN and EDXA.

CELL CULTURE: Maintenance of adherent and suspension cells (both cancer and normal cells). isolation, culture and maintenance of primary cell lines like dendritic cells (DCs) and melanoma tumour cells. Isolation of CD11b+ tumor associated macrophages (TAM) using anti-CD11b antibody-labelled magnetic beads from subcutaneous tumor.

DNA BIOLOGY: Gel electrophoresis

PROTEIN BIOLOGY: SDS-PAGE, western blot, profiling cell surface markers (e.g. DC, TAM markers) with flow cytometry, protein isolation from mammalian cells, plasma and serum.

DRUG AND GENE DELIVERY: liposomal encapsulation of therapeutic siRNAs, plasmids, drugs and their DLS studies, uptake studies, endosomal pathway analysis and transfection data analysis.

RADIO ISOTOPES HANDLING: Preparation of C^{14} labelled glucose carbon nanospheres and scintillation counter handling.

BIOCHEMISTRY: cytotoxicity studies, apoptosis and cell cycle and ROS analysis fluorescent labelling of liposomes and their uptake study. protein and DNA quantification,

CELL BIOLOGY: Morphological changes in mitochondria by MOMP changes and mitotracker studies by confocal or FACS, morphological changes in lysosomes by DC staining or lysotracker to know the induction of autophagy and nuclear morphological changes by DAPI or AO staining.

IMMUNOLOGY: immunocytochemistry and immunohistochemistry.

ANIMAL HANDLING: Handling of mice, nude mice, oral feeding, intraperitoneal and subcutaneous injections, melanoma, colon, brain orthotopic tumour model development and blood withdrawal from supra orbital plexus.

INSTRUMENTATION: UV-VIS-IR spectrophotometer, fluorescence microscope, stereo microscope, confocal microscope with live cell imaging, multimode reader, nanodrop, gel Doc, western apparatus, FACS Canto-II, Scintillation counter, DLS instrumentation, Tissue homogenizer, Cryostat for tissue section, Ti-probe sonicator and extruders for preparing small unilamellar liposomes, In-vivo imager (Perkin Elmer IVIS spectrum animal imager).

COMPUTER SKILLS: Proficient in using Endnote, Mendeley, Origin, Graph pad prism, Image j software, FCS express and BD FACS diva software for flow cytometric data analysis, NIS elements software for confocal data analysis, Chembiodraw ultra, Angioquant for the analysis of angiogenesis in chick embryo and Microsoft office.

M M CH SEKHAR JAGGARAPU

PERSONAL INFORMATION

M M CH SEKHAR J
S/o Gopala Krishna J,
H.No: 12-13-588/C,
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Tarnaka,
Hyderabad-500076,
Telangana, India.

Languages known

- English- read, write, and speak.
- Telugu- read, write, and speak.
- Hindi- read and write.

Hobbies

- Playing chess, badminton, and cricket.

REFERENCES

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