

**ANDHRA UNIVERSITY**  
**DEPARTMENT OF ORGANIC CHEMISTRY & FDW**  
**Revised Syllabus for M.Sc Chemistry (Organic chemistry specialization)**  
**(With effect from the Admitted batch of 2021-2022 Academic Year)**

**Programme objectives:**

1. To provide students in the scientific skills and chemical knowledge essential to develop and apply the knowledge in chemical sciences for preparing chemists of exceptional skills and abilities.
2. To provide knowledge, application, skills in required areas of chemical education
3. To equip students with effective scientific communication skills
4. To encourage the pursuit of lifelong education
5. To develop each student into a committed individual with ethical and social responsibility

**Programme Specific objectives:**

The students who complete the M.Sc. Organic Chemistry course shall:

1. Have strong foundation in the fundamentals and applications of chemical knowledge and understanding
2. Have the abilities to think critically, logically and analytically and solve problem in the area of chemical sciences, materials, environmental aspects, medicines and energy
3. Have the abilities to carry out chemical experiments, record and analyze the results and design advanced models
4. Have the abilities to use modern library and information retrieving tools to obtain information and assimilate to generate concepts and apply them in challenging situations
5. Have the abilities to effectively communicate their knowledge and skills to other chemists and non-chemists in oral or written formats
6. Secure suitable employment in the areas of chemical industries like pharmaceutical, steel and metals, polymers, fuels and nuclear, environmental and pollution control, nanotechnology and composite materials, teaching and research, etc.
7. Have the personal attributes and ethical sensibilities to enable them to function as effective scientists and citizens

M.Sc. Chemistry (Final Year)  
**Specialization: ORGANIC CHEMISTRY**  
 Syllabus (w.e.f.2021-22 admitted batch)

Scheme of Instruction and Examination for **III Semester**

S.No	Course Title	Course Type	Instruction Periods per week	External Marks	Internal Marks	Total Marks	Duration of External Examination	Credits
1	Organic Reaction Mechanisms, Pericyclic Reactions and Photochemistry	Theory	4	80	20	100	3 hours	4
2	Organic Spectroscopy	Theory	4	80	20	100	3 hours	4
3	Organic Synthesis	Theory	4	80	20	100	3 hours	4
4	Chemistry of Natural Products	Theory	4	80	20	100	3 hours	4
5	Practical-I: Multi stage organic synthesis	Lab	3	80	20	100	6 hours	4
6	Practical-II: Chromatography & Viva-voce	Lab	3	80	20	100	6 hours	4
7	MOOC course		-	-	-	-	-	4
8	Value added course - Intellectual Property Rights (IPR)		-	-	-	-	-	2
Total						600		30

Scheme of Instruction and Examination for **IV Semester**

S.No	Paper Title	Course Type	Instruction Periods per week	External Marks	Internal Marks	Total Marks	Duration of External Examination	Credits
1	Modern Synthetic Methodology in Organic Chemistry	Theory	4	80	20	100	3 hours	4
2	Organic Spectroscopy and Structure determination of natural products	Theory	4	80	20	100	3 hours	4
3	Designing organic synthesis and synthetic applications of organo- boranes and - silanes	Theory	4	80	20	100	3 hours	4
4	Drug design and drug chemistry	Theory	4	80	20	100	3 hours	4
5	Project work	Lab	-	100	-	100	-	4
6	Practical-I: Organic Mixture analysis	Lab	3	80	20	100	6 hours	4
7	Practical-II: Estimations and Isolation		3	80	20	100	6 hours	4
8	MOOC course		-	-	-	-	-	4
9	Value added course (Research Methodology)		-	-	-	-	-	2
Total						700		34

M.Sc. Chemistry (First Year)  
SEMESTER I  
Paper III- Organic Chemistry  
(w.e.f. 2021-22 admitted batch)

**Scheme of Instruction and Examination for I Semester**

S.No	Paper Title		Instruction Periods per week	External Marks	Internal Marks	Total Marks	Duration of External Examination	Credits
1	Organic Chemistry	Theory	4	80	20	100	3 hours	4
2	Practical : Organic Chemistry	lab	3	60	15	75	3 hours	3
Total						175		7

M.Sc. Chemistry (First Year)  
SEMESTER II  
Paper III- Organic Chemistry  
(w.e.f. 2021-22 admitted batch)

**Scheme of Instruction and Examination for II Semester**

S.No	Paper Title		Instruction Periods per week	External Marks	Internal Marks	Total Marks	Duration of External Examination	Credits
1	Organic Chemistry	Theory	4	80	20	100	3 hours	4
2	Practical : Organic Chemistry	Lab	3	60	15	75	3 hours	3
Total						175		7



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**KOPPOJI CHINNA**

**REGD N.O 721228932001**

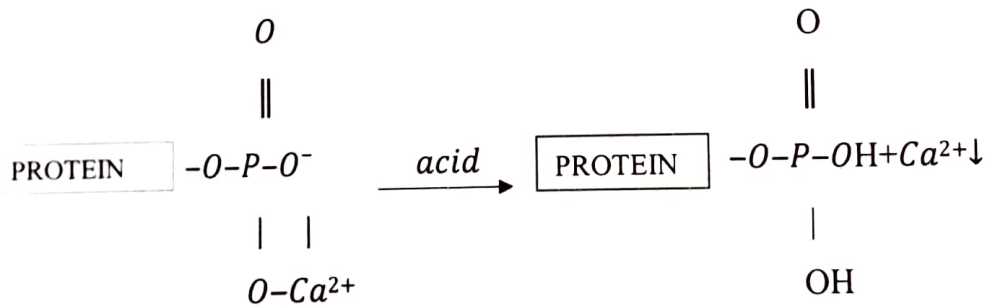
# Isolation of Casein from Milk

Aim:

Isolation of Casein from Milk

Introduction:

Milk consists of three proteins, one of them is casein. It is a globular protein. The phosphate groups are attached to the hydroxyl groups of some of the amino acid side chains. Casein exists in milk as the calcium salt, calcium caseinate. Calcium caseinate has an isoelectric point of pH- 4.6. Therefore, casein is insoluble in solutions of pH less than 4.6. The pH of milk is about 6.6, casein has a charge at this pH and is solubilized as a salt. If we change the pH of milk from 6.6 to 4.6 which is the IEP of casein, the neutral protein precipitates, with the calcium ions remaining in solution. Casein, the protein predominantly found in milk, is present in cow's milk to the extent of 3.53.5% and in human milk to the extent of 0.3-0.6%. It gets precipitated by acidifying the milk to a pH of 4.6-4.7. Casein is used to coat the paper for making books and magazines and is also used in the textile industry for fixing colours.



## PROCEDURE:

Measure 50ml milk by a graduated cylinder and put it in a 100ml beaker.  
Heat the solution to 55°C, measure the temperature with a thermometer.

Prepare 20ml 10% acetic acid solution, add dropwise the 10% acetic acid solution while stirring.

Collect the casein with solution filtration. Prepare 20ml 1:1 ethylether-ethanol solution and then add this mixture to the casein precipitate.

Weight the filter paper and collect the casein by suction filtration. Keep the casein and allow to dry.

## Discussion:

Casein is present 3.5% in the cow milk so the theoretical value is 3.5g  
m/100ml (3.5%) but in our experiment milk (turung) contains 1.13%

## Reference:

Lab manual in biochemistry by Art Nigam

# 1,4-Dihydro Pyridine Derivatives

**Title of project:** Synthesis and characterization of the novel class of the 1,4-dihydropyridine derivatives by photo-chemically.

## Objectives:

- To synthesize a novel class of heterocyclic compounds by combining of both 1,3,4-oxadiazoles and 1,4-dihydropyridine derivatives by photo-chemically.
- To characterize the structure of the synthesized compound by the spectral analysis ( $^1\text{H}$  &  $^{13}\text{C}$  NMR, IR).
- To analyze the anti-microbial activity and medicinal characteristics of synthesized compounds.

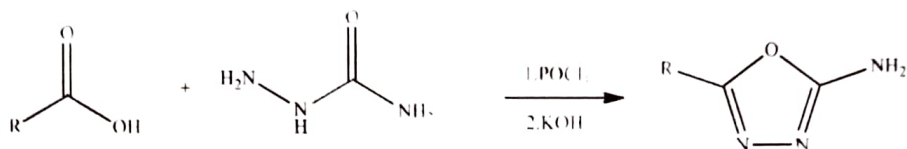
## Brief Introduction:

Much of my research focuses on the photo-chemical synthesis of the 1,4-dihydropyridine derivatives. 1,4-Dihydropyridines are a class of heterocyclic compounds first synthesized by Arthur Hantzsch in 1882 (Hantzsch, 1882). They have a wider range of biological and pharmacological actions, including Calcium channel blockers (David, 2007), antitumor (Boer and Gekeler, 1995), anti-inflammatory (Briukhanov, 1994), and analgesic activities (Gullapalli and Ramarao, 2002), as well as more than 12 medicinally significant drugs such as Diludine, Felodipine, Amlodipine, Nimodipin, and others, are manufactured and used around the world (Bossert et al., 1981).

A large number of methods are reported to synthesis of the derivate of 1,4-Dihydropyridines using different processes based on the microwave assisted reaction, (Kidwai et al., 2002) solar thermal energy (Mekheimer et al., 2008), ultrasound irradiation (shaabaani et al., 2006) and Grignard reagent (love et al., 1974).

On the other hand, Oxadiazoles are a monocyclic compound with multiple medicinal applications. Although the derivatives of oxadiazoles has begun only in 1950 (Somani and Shirodkar, 2011). There are lot of methods already reported to synthesize the various oxadiazoles derivatives

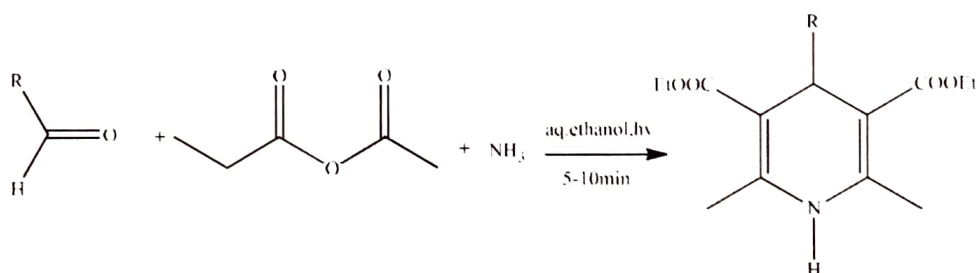
(Karabelyov et al, 2021). Derivatives of 2-amino 1, 3, 4- oxadiazoles are showing anti salmonellatyphiactivity. (Salama, 2020).



Salama, 2020

Photochemical reactions are an attractive approaching of organic synthesis using light sources especially visible light in presence of green solvents (water, aq. ethanol). Photochemical reactions are mostly stereo, region, and chemo specific reactions produce less byproducts throughout

the reaction. And requires much less time compared to thermal methods and for this reason, photochemical reactions occupy an interesting position and excellent reviews have been published (Hoffmann, 2008; Fagnoni et al 2007). 1, 4-Dihydropyridines derivatives are synthesized in photochemically (Ghosh et al, 2013)



Ghosh et al., 2013

N-containing heterocycles, especially five-membered and six membered rings, are of great interest as they are found in natural products and used frequently in medicinal chemistry. The 1,3,4-oxadiazoles and 1,4-

Dihydropyridines derivatives are showing great medicinal applications, keeping this in my views, author decided to enhancing the medical properties by a developing a novel class of heterocyclic compound by combining of both 1,3,4-oxadiazoles and 1,4-Dihydropyridines derivatives by photochemical reaction,

## References:

- Hantzsch, A. *Justus Liebigs Ann. Chem.* 1882, 215, 1–82.
- David, J. T. *Biochem. Pharmacol.* 2007, 74, 1–9.
- Boer, R.; Gekeler, V. *Drugs Future* 1995, 20, 499–509.
- Briukhanov, V. M. *Exp. Clin. Pharmacol.* 1994, 57, 47–49;
- Gullapalli, S.; Ramarao, P. *Neuropharmacology* 2002, 42, 467–475.
- Bossert, F.; Mayer, H.; Wehinger, E. *Angew. Chem., Int. Ed. Engl.* 1981, 20, 762–769;
- Kidwai, M.; Saxena, S.; Mohan, R.; Venkataramanan, R. J. *Chem. Soc., Perkin Trans. 1* 2002, 1845–1846.
- Mekheimer, R. A.; Hameed, A. A.; Sadek, K. U. *Green Chem.* 2008, 10, 592–593.
- Shaabani, A.; Rezayan, A. H.; Rahmati, A.; Sharifi, M. *Monatsh. Chem.* 2006, 137, 77–81
- Love, B.; Goodman, M. M.; Snader, K. M.; Tedeschi, R.; Macko, E. J. *Med. Chem.* 1974, 17, 956–965.
- Somani RR, Shirodkar PY. Oxadiazole: a biologically important heterocycle. *ChemInform.* 2011; 42.
- Hoffmann, N. *Chem. Rev.* 2008, 108, 1052–1103.
- Fagnoni, M.; Dondi, D.; Ravelli, D.; Albini, A. *Chem. Rev.* 2007, 107, 2725–2756.



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**DUVVU VASU**

**REGD N.O 721228932002**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**J SRAVANI**

**REGD N.O 721228932003**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**G SAI VENKATA TEJA**

**REGD N.O 721228932004**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**K RAVI**

**REGD N.O 721228932005**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**K VASANTHA**

**REGD N.O 721228932006**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**D PAVAN KUMAR**

**REGD N.O 721228932007**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**LANKA SAI PRAKASH**

**REGD N.O 721228932023**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**B ESWAR RAO**

**REGD N.O 721228932034**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**MADDU SAI**

**REGD N.O 721228932033**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**P SOWJANYA**

**REGD N.O 721228932032**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**R HARSHAVARDHAN RAO**

**REGD N.O 721228932031**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**N SAI KUMAR**

**REGD N.O 721228932030**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**P SATYANARAYANA**

**REGD N.O 721228932029**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**V RAMUNAIDU**

**REGD N.O 721228932028**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**Y NAVEEN**

**REGD N.O 721228932027**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**CHINTAPALLI SHAINY**

**REGD N.O 721228932026**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**B SAI KUMAR**

**REGD N.O 721228932025**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**LANKA SAI PRAKASH**

**REGD N.O 721228932023**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**B ROHINI KUMAR**

**REGD N.O 721228932024**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**D MARUTHI**

**REGD N.O 721228932022**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**A Y KRISHNASAI GOKUL**

**REGD N.O 721228932021**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**BONDA PRASADRAO**

**REGD N.O 721228932019**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**V V NEELADRI REDDY**

**REGD N.O 721228932020**



**DR.V. S. KRISHNA GOVERNMENT DEGREE & PG COLLEGE (A)**

**MADDILAPALEM , VISAKHAPATNAM – 13 ,**

**PROJECT NAME : 1 . 1,4-Dihydro Pyridine Derivatives**

**2. Isolation of Casein from Milk**


**SUBMITTED FOR**

**Branch of chemistry**

**BATCH : 2021-23**

**GUIDE**

**1. Dr . M Gopi**

  
Post Graduate Department of Chemistry,  
Dr. V. S. Krishna Govt. College  
VISAKHAPATNAM

**2. Sri Dhanraj**



**SUBMITTED BY**

**BANNA RAMU**

**REGD N.O 721228932018**