LOGO DELLA STRUTTURA PRIMARIA

COURSE: **Organic Chemistry of Bioactive Compounds**			
ACADEMIC YEAR: **2016/2017**			
TYPE OF EDUCATIONAL ACTIVITY: (Basic, Characterizing, Affine, Free choice, Other) **Free Choice**			
TEACHER: **Prof.Maria Funicello**			
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phone: **+39 0971 205490**		mobile (optional): **+39 320 4371612**	
Language: **Italian**			
ECTS: **(lessons)** **6**	n. of hours: (**lessons)** **48**	Campus: Potenza Dept./School: **Dept of Science** Program:**Chemical Science LM54**	Semester: **I**

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The aim is to provide the fundamentals of a chemical approach for the drug discovery and developments. Furthermore it has also the aim to know the most common targets in medicinal chemistry either in research than in production.

PRE-REQUIREMENTS

Knowledge of basic contents of organic chemistry.

SYLLABUS

1. Natural and synthetic drugs; research team for the discovery of new active molecules; biological assays; pre-clinical and clinical phases; patents, SAR studies; importance of relative and absolute configuration.
2. How is possible the change og structure of a lead compounds. Principal synthetic approaches. Combinatorial chemistry
3. Main chemoterapeutic agents; cellular membranes; antiviral , antifungine and antibacterial drugs. HIV -1: life cycle ofb the virus and therapies.
4. Antitumoral drugs and in particular taxol and antioxidants
5. Peptidomimetics and pseudopeptides; Anti-Alzheimer and anti-Parkinson drugs; neurofibrillar aggregation; BACE-1 and HIV-PR: considerations.
6. Prodrugs: characteristics and application . ADEPT, ADAPT, GDEPT, VDEPT. Activation
7. “From bench to market”: what is the PRDG, atom economy, environmental impact, catalysis, scale-up.
8. Acyclovir: history and perspectives.

TEACHING METHODS

Theoretical lessons, Technical visits.

EVALUATION METHODS

Oral examination and discussion of a project work on Prodrugs

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

1. Gareth Thomas, “Medicinal Chemistry, an introduction”, Wileey Interscience
2. Silverman, R.B. *The Organic Chemistry of Drug Design and Drug Action*; Elsevier Academic Press: Evanston, IL, USA, 2004
3. Cabri, W.; Di Fabio, R. “From bench to market”, Oxford University Press, New York, 2000
4. H.P. Rang, M.M. Dale, J. M. Ritter, P. K. Moore, “Farmacologia”, Casa Editrice Ambrosiana per l’edizione italiana.

INTERACTION WITH STUDENTS

Contact by mail and receive by appointment on every day

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EXAMINATION SESSIONS (FORECAST)[1] 23/2/2017; 10/3/2017; 5/5/2017; 15/6/2017; 20/7/2017; 5/9/2017; 4/10/2017; 4/12/2017
SEMINARS BY EXTERNAL EXPERTS YES x□ NO □
FURTHER INFORMATION

[1] Subject to possible changes: check the web site of the Teacher or the Department/School for updates.