

Syllabus SIO 296 – Fall 2015

NMR Spectroscopy of Marine Natural Products

Instructor:

Chambers Hughes (chughes@ucsd.edu)

Tuesday/Thursday 11:00 – 12:20 PM

Vaughn Hall 348

(4 Units)

Recommended books:

P.M. Dewick, *Medicinal Natural Products: A Biosynthetic Approach* 3rd edition.

(<http://onlinelibrary.wiley.com/book/10.1002/9780470742761>)

R.M. Silverstein, et al. *Spectrometric Identification of Organic Compounds* 7th edition.

Date	Lecture	Topic
Sept 24 (Th)	1	Introduction to marine natural products
Sept 29 (Tu)	2	Types of natural products: peptides, polyketides and fatty acids (<i>Medicinal Natural Products</i> , chapters 2, 7, 3 and 4)
Oct 1 (Th)	3	Types of natural products: peptides, polyketides, terpenes, alkaloids (<i>Medicinal Natural Products</i> , chapters 5 and 6)
Oct 6 (Tu)	4	Chirality and ways to measure optical purity (handout 1)
Oct 8 (Th)	5	NMR basics (handout 2)
Oct 13 (Tu)	6	¹ H Chemical shift (handouts 3-7)
Oct 15 (Th)	7	¹³ C Chemical shift (handouts 3-7)
Oct 20 (Tu)	8	Homonuclear <i>J</i> coupling (handout 8)
Oct 22 (Th)	9	Homonuclear <i>J</i> coupling
Oct 27 (Tu)	10	Heteronuclear <i>J</i> coupling
Oct 29 (Th)	11	¹ H- ¹ H COSY, HSQC, HMBC (handouts 9 and 10)
Nov 3 (Tu)	12	ROESY, NOESY
Nov 5 (Th)	13	Ipsenol
Nov 10 (Tu)	14	Caryophyllene oxide
Nov 12 (Th)	15	Marinopyrrole A
Nov 17 (Tu)	16	Ammosamide A
Nov 19 (Th)	17	Cyclovalin A
Nov 24 (Tu)	18	Cyclovalin A
Nov 26 (Th)		HOLIDAY
Dec 1 (Tu)	19	Student Presentations
Dec 3 (Th)	20	Student Presentations

Final Dec 9 (11:30-2:30 PM)

Course requirements: attend, complete all homework assignments, and present one primary research paper