

Syllabus SIO 296 – Winter 2016

Anticancer Natural Products (formerly, Cellular Targets of Marine Natural Products)

Instructor:

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Tuesday/Thursday 11:00 – 12:20 PM

Vaughn Hall 348

(4 Units)

Date	Lecture	Topic
Jan 10 (Tu)	1	Small molecule-protein/DNA interactions, marine natural products
Jan 12 (Th)	2	Eukaryotic targets, cancer chemotherapy
Jan 17 (Tu)	3	Actin filament-destabilizing agents [latrunculin (1983) , reidispongiolide (1994) , aplyronine (1993) , swinholidide (1990) , bistramide (1988)]
Jan 19 (Th)	4	Actin filament-stabilizing agents [phalloidin, jaspamide (1986) , hectochlorin (2002)]
Jan 24 (Tu)	5	Microtubule-destabilizing agents, vinca site [vinblastine, vincristine, dolastatin-10 (1987) , halichondrin B (1985) , spongistatin (1993) , cryptophycin (1994) , diazonamide (1991)]
Jan 26 (Th)	6	Microtubule-destabilizing agents, colchicine site [colchicine, curacin (1994)]
Jan 31 (Tu)	7	Microtubule-stabilizing agents, taxoid site [taxol, epothilone B, discodermolide (1991) , dictyostatin (1994) , eleutherobin (1997)]
Feb 2 (Th)	8	Microtubule-stabilizing agents, laulimalide site [laulimalide (1988) , peloruside (2000)]
Feb 7 (Tu)	9	Ubiquitin/proteasome [fellutamide B, epoxomicin, carmaphycin (2012)]
Feb 9 (Th)	10	Ubiquitin/proteasome [omuralide, salinosporamide (2003) , syrbactin]
Feb 14 (Tu)	11	Kinases [staurosporine, rapamycin, lymphostin]
Feb 16 (Th)	12	Kinases [didemnin B (1978) / aplidine (1988) , bryostatin (1982)]
Feb 21 (Tu)	13	Kinases [hymenialdisine (1982) , kahalalide F (1993)]
Feb 23 (Th)	14	Topoisomerases [camptothecin (1966), podophyllotoxin (1951)/etoposide]
Feb 28 (Tu)	15	DNA [CC-1065 (1981), mitomycin C (1958), calicheamicin (1987), ecteinascidin 743 (1984)]
Mar 2 (Th)	16	Guest speaker or Special Nobel Lecture (“The chemistry and biology of avermectin”)
Mar 7 (Tu)	17	Guest speaker or Special Nobel Lecture (“The chemistry and biology of avermectin”)
Mar 9 (Th)	18	Student presentations
Mar 14 (Tu)	19	Student presentations
Mar 16 (Th)	20	Student presentations

Grading for this class depends upon the following:

10% class participation

30% short quizzes

60% final presentation

Recommended reading:

Anticancer Agents from Natural Products, 2nd ed.; Cragg, G. M., Kingston, D. G. I., Eds.; Taylor & Francis Group: Boca Raton, 2011.