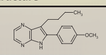
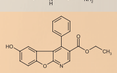
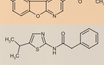
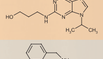
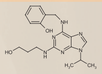
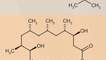
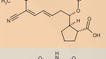
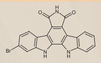
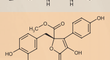
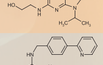
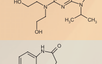
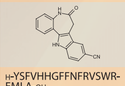
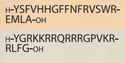
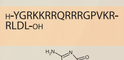
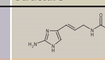
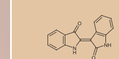
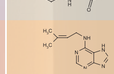
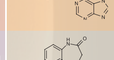
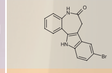
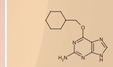
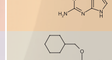
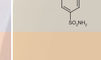
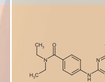
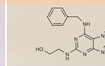
Inhibitor	Structure	Prod. No.	Size	CDK1	CDK2	CDK4	CDK5	GSK-3	Other Enzymes
Aloisine [RP106; 7-*n*-Butyl-6-(4-methoxyphenyl)[5*H*]pyrrolo[2,3-*b*] pyrazine]		ALX-270-386-M001	1 mg	700nM (B) [1]			1.5µM (p35) [1]	920nM [1]	
Aloisine A [RP107; 7-*n*-Butyl-6-(4-hydroxyphenyl)[5*H*]pyrrolo[2,3-*b*]pyrazine]		ALX-270-385-M001	1 mg	150nM (B) [1]	120nM (A) [1] 400nM (E) [1]	>100µM (D1) [1]	160nM (p35) [1] 200nM (p25) [1]	500nM (α) [1] 1.5µM (β) [1]	erk1: 18µM [1] erk2: 22µM [1] JNK: 3.3-10µM [1] IRTK: 60µM [1] PIM 1: >10µM [1]
Alsterpaullone [9-Nitro-7,12-dihydroindolo-[3,2-*d*][1]benzazepin-6(5*H*)-one]		ALX-270-275-M001 ALX-270-275-M005	1 mg 5 mg	35nM (B) [2]	15nM (A) [2] 80nM (A) [3] 200nM (E) [2]	>10µM (D1) [2]	40nM (p25) [2]	4nM (α/β) [2] 110nM (β) [3]	erk1: 22µM [2] erk2: 4.5µM [2] LCK: 470nM [3]
3-Amino-1*H*-pyrazolo[3,4-*b*] quinoxaline		ALX-270-387-M001 ALX-270-387-M005	1 mg 5 mg	600nM (B) [4]			400nM (p25) [4]	1µM (β) [4]	
Aminopurvalanol A (2*R*)-2-((6-((3-Amino-5-chlorophenyl)amino-9-(1-methylethyl)-9*H*-purin-2-yl) amino)3-methyl-1-butanol; NG-97]		ALX-270-249-M001 ALX-270-249-M005	1 mg 5 mg	33nM (B) [5]	33nM (A) [5] 28nM (E) [5]		20nM (p35) [5]		
Arcyriaflavin A		ALX-350-375-M001	1 mg			59nM [6]			
3-ATA [3-Amino-9-thio(10*H*)-acridone]		ALX-350-273-M001 ALX-350-273-M005	1 mg 5 mg	88µM (A) [7]	>100µM (A) [7] >100µM (E) [7]	3.1µM (D1) [7]			
Benfluorene [Ethyl 6-hydroxy-4-phenylbenzo[4,5]furo[2,3-*b*])pyridine-3-carboxylate; 1-Aza-9-oxafluorene 5a]		ALX-270-388-M001 ALX-270-388-M005	1 mg 5 mg	28.8µM [8]	>100µM (E) [8]	>100µM (D1) [8]	6% inhibition at 10µM [8]		
BML-259 [N-(5-Isopropylthiazol-2-yl)phenyl-acetamide]		ALX-270-487-M005	5 mg		98nM (E) [9]		64nM (p25) [9]		
Bohemine [6-Benzylamino-2-(3-hydroxypropylamino)-9-isopropylpurine]		ALX-270-390-M001 ALX-270-390-M005	1 mg 5 mg	1.1µM (B) [10]	600nM (E) [10]				
Bohemine, 2-Hydroxy- [6-(3 Hydroxybenzyl)amino-2-(hydroxypropylamino)-9-isopropylpurine]		ALX-270-395-M001 ALX-270-395-M005	1 mg 5 mg	100nM [11]	80nM [11]				
Borrelidin [2-(7-Cyano-8,16-dihydroxy-9,11,13,15-tetramethyl-18-oxooxacyclooctadeca-4,6-dien-2-yl)cyclopentanecarboxylic acid; Treponemycin; U 78548; C2989]		ALX-380-102-MC05 ALX-380-102-M001	0.5 mg 1 mg						Cdc28/Cln2 (yeast CDK) : 24µM [12]
2-Bromo-12,13-dihydro-5*H*-indolo[2,3-*a*]pyrrolo[3,4-*c*] carbazole-5,7(6*H*)-dione		ALX-270-403-M001	1 mg	2.1µM (B) [13]	520nM (E) [13]	76nM (D1) [13]		>20µM [13]	CaMKII : 12.4µM [13] PKA : >20µM [13]
Butyrolactone I		ALX-350-250-C200	200 µg	0.68µM (B) [14]	[14]		[15]		
CGP 74514A [N-(*cis*-2-Aminocyclohexyl)-N-(3-chlorophenyl)-9-ethyl-9*H*-purine-2,6-diamine]		ALX-270-391-M001 ALX-270-391-M005 ALX-270-391-M025	1 mg 5 mg 25 mg	25nM [16]					PKC-α: 6.µM [16] PKA: 125µM [16] EGFR: >10µM [16]
CDK1/2 Inhibitor III [5-Amino-3-[(4-(aminosulfonyl) phenyl)amino)-*N*-(2,6-difluorophenyl)-1*H*-1,2,4-triazole-1-carbothioamide]		ALX-270-442-M001	1 mg	600pM (B) [17]	500pM (A) [17]			32nM (β) [17]	VEGF-R2: 140nM [17]
3-(2-Chloro-3-indolylmethylene)-1,3-dihydroindol-2-one		ALX-270-392-M001 ALX-270-392-M005	1 mg 5 mg	5.8µM (B) [18]			25µM [18]	>100µM (β) [18]	
Compound 52 [2-(2-Hydroxyethylamino)-6-(3-chloroanilino)-9-isopropylpurine]		ALX-270-248-M001	1 mg	340nM [19]					Cdc28p: 7µM [19] Pho85p: 2µM [19]
CR8		INQUIRE!		0.09µM (B) [20]	0.072µM (A) [20] 0.041µM (E) [20]		0.11µM (p25) [20]	12.0µM (α/β) [20]	CDK7: 1.10µM (H) [20] CDK9: 0.18µM (T) [20] CK1ε/ε: 0.40µM [20] DYRK1A: 3.60µM [20] Erk2: 3.60µM [20]
CVT-313 6-(4-Methoxybenzylamino)-2-[*bis*-(2-hydroxyethylamino)]-9-isopropylpurine]		ALX-270-393-M001 ALX-270-393-M005	1 mg 5 mg	4.2µM (B) [21]	500nM (A) [21] 500nM (E) [21]	215µM (D1) [21]			
9-Cyanopaullone [9-Cyano-7,12-dihydroindolo-[3,2-*d*][1]benzazepin-6[5*H*]-one]		ALX-270-282-M001 ALX-270-282-M005	1 mg 5 mg	24nM (B) [22, 23]			44nM (p25) [2]	10nM (β) [2]	
Cyclin-dependent Kinase 2 Inhibitor [CDK2/Cyclin Inhibitor]	H-YSFVHHGFFNFRVSWR-EMLA-OH	ALX-153-012-M001 ALX-153-012-M005	1 mg 5 mg		<100nM (E) [24]				
Cyclin-dependent Kinase 2 Inhibitory Peptide I [CDK2/Cyclin Inhibitory Peptide I]	H-YGRKKRRQRRRGPVKR-RLFG-OH	ALX-153-041-C500	500 µg		[25]				
Cyclin-dependent Kinase 2 Inhibitory Peptide II [CDK2/Cyclin Inhibitory Peptide II]	H-YGRKKRRQRRRGPVKR-RLDL-OH	ALX-153-042-C500	500 µg		[25]				
Debromohymenialdisine [DBH; 4-(2-Amino-4-oxo-2-imidazolin-5-ylidene)-4,5,6,7-tetrahydropyrrolo[2,3-c]azepin-8-one]		ALX-350-290-C100	100 µg						Chk1: 3µM [26] Chk2: 3.5µM [26] MEK1: 824nM [27]
6-Dimethylaminopurine [6-DMAP; N⁶,N⁶-Dimethyladenine]		ALX-480-050-M100	100 mg	120µM (B) [28]			120µM (p35) [28]		Non-selective protein kinase inhibitor.
Elbfluorene [3-Acetyl-6-hydroxy-4-phenyl-benzo[4,5]furo[2,3-*b*]pyridine; 1-Aza-9-oxafluorene 5b]		ALX-270-389-M001 ALX-270-389-M005	1 mg 5 mg	4.2µM (B) [8]	>100µM (E) [8]	>100µM (D1) [8]	15% inhibition at 10µM [8]		
Fascaplysin		ALX-270-300-M001 ALX-270-300-M005	1 mg 5 mg	>100µM (B) [29]	>50µM (A) [29] >50µM (E) [29]	350nM (D1) [29] >100µM (D2) [29] >100µM (D3) [29]	20µM (p35) [29]		**CDK6 (D1)**: 3.4µM [29] **CDK6 (D2)**: >50µM (D2) [29] v-abl: >10µM [29] c-met: >10µM [29] IGF-1R: >10µM [29] IRTK: >10µM [29]
Flavopiridol [L-86-8276; NSC-649890]		ALX-430-161-M005 ALX-430-161-M025	5 mg 25 mg	400nM [30]	100nM [31]	[31]			
10Z-Hymenialdisine [4-(2-Amino-4-oxo-2-imidazolin-5-ylidene)-2-bromo-4,5,6,7-tetrahydropyrrolo[2,3-c]azepin-8-one]		ALX-350-289-C500	500 µg	22nM (B) [32]	70nM (A) [32] 40nM (E) [32]	600nM (D1) [32]	28nM (p25) [32]	10nM (β) [32] 130nM (β) [33]	**CDK3**: 100nM /cyclin E [32] **CDK6 (D2)**: 700nM [32] CK1: 35nM [32] erk1: 470nM [32] erk2: 2µM [32] JNK: 8.5µM [32] MAPKK: 1.2µM MARK2: 670nM [33] MEK1: 6nM [27]

Inhibitor	Structure	Prod. No.	Size	CDK1	CDK2	CDK4	CDK5	GSK-3	Other Enzymes
Hymenidin [2-Debromooroidin]		ALX-350-291-M001	1 mg	>100µM (B) [32]			4µM (p25) [32]	12µM (β) [32]	CK1: >100µM [32]
Indirubin		ALX-270-361-M001 ALX-270-361-M005	1 mg 5 mg	10µM (B) [34]	2.2µM (A) [34] 7.5µM (E) [34]	12µM (D1) [34]	5.5µM (p35) [34]	600nM (β) [35]	CK1: 8.5µM [34] CK2: >100µM [34] erk1:>100µM [34] erk2: 43µM [34] JNK: >100µM [34] MAPKK:>100µM [34] c-Raf:>10µM [34] c-Src: 18µM [34] Non-kinases: β-Lactamase: 20µM [36] Chymotrypsin: 100µM [36] Malate Dehdyrogenase: 30µM [36]
Indirubin-5-sulfonic acid . Na [E226]		ALX-270-296-M001 ALX-270-296-M005	1 mg 5 mg	55nM (B) [34]	35nM (A) [34] 150nM (E) [34]	300nM (D1) [34]	65nM (p35) [34]	280nM (β) [35]	CK1: 10µM [34] CK2: 1.5µM [34] erk1:38µM [34] erk2: >100µM [34] JNK: 5.2µM [34] MAPKK: 3µM [34] PKC b2: 6.5µM [34] c-Raf: 5.5µM [34] c-Src: 3.8µM [34]
Indirubin-3′-monoxime		ALX-270-271-M001 ALX-270-271-M005	1 mg 5 mg	180nM (B) [34]	590nM (A) [3] 440nM (A) [34] 250nM (E) [34]	3.33µM (D1) [34]	100nM (p35) [34]	190nM (β) [3] 22nM (β) [35]	AMPK: 220nM [3] CK1: 9µM [34] CK2: 12µM [34] erk1: >100µM [34] erk2: >100µM [34] JNK: NT LCK: 330nM [3] MAPKK: >100µM [34] c-Raf: >100µM [34] SGK: 380nM [3] c-Src: NT
5-Iodo-indirubin-3′-monoxime		ALX-270-424-M001	1 mg	25nM (B) [35]			20nM (p25) [35]	9nM (β) [35]	
N-6-(Δ²-Isopentenyl)-adenine [6-(γ,γ-Dimethylallylamino) purine; Triacanthine]		ALX-350-034-M100	100 mg	45µM (B) [28]	50µM (A) [28]	200µM (D1) [28]	80µM (p35) [28]		**CDK6 (D3)**: >100µM [28] erk1: 90µM [28] IRTK: 140µM [28] p55fgr: 78µM [28] p65lck: 90µM [28]
Kenpaullone [9-Bromo-7,12-dihydroindolo-[3,2-*d*][1]benzazepin-6(5*H*)-one]		ALX-270-274-M001 ALX-270-274-M005	1 mg 5 mg	400nM (B) [2]	670nM (A) [3] 7.5µM (E) [37]	>100µM (D1) [37]	850nM (p25) [2] 850nM (p35) [37]	23nM (β) [2] 230nM (β) [3]	CK2: 20µM [37] erk1: 20µM [37] erk2: 9µM [37] LCK: 470nM [3, 37] c-Raf: 38µM [37] c-Src: 15µM [37]
NU2058 [O⁶-Cyclohexylmethylguanine]		ALX-270-394-M005 ALX-270-394-M025	5 mg 25 mg	5µM (B) [38]	12µM (A) [38]				
NU6102 [O⁶-Cyclohexylmethyl-2-(4′-sulfamoylanilino)purine]		ALX-270-419-M001 ALX-270-419-M005	1 mg 5 mg	9.5nM (B) [39]	5.4nM (A3) [39]	1.6µM (D1) [39]			DYRK1A: 0.9µM [39] PDK1: 0.8µM [39] ROCKII: 0.6µM [39]
NU6140 [4-(6-Cyclohexylmethoxy-9*H*-purin-2-ylamino)-*N*,*N*-diethyl-benzamide]		ALX-270-441-M005	5 mg	6.6µM (B) [40]	0.41µM (A) [40]	5.5µM (D) [40]	15µM (p25) [40]		**CDK7 (H)**: 3.9µM [40]
Olomoucine (high purity) [6-Benzylamino-2-(2-hydroxyethylamino)-9-methylpurine]		ALX-350-013-M005 ALX-350-013-M025	5 mg 25 mg	50µM (A) [28] 7µM (B) [28] 10µM (E) [28]	7µM (A) [28] 7µM (E) [28]	>1M (D1) [28]	3µM (p25) [35] 3µM (p35) [28]	100µM (β) [35]	**CDK6 (D3)**: >250µM [28] erk1: 50µM [42] erk2: 40µM [42] IRTK: 400µM [42]
Olomoucine II [6-(2-Hydroxybenzylamino)-2(R)-([1-(hydroxymethyl)-propyl]amino-9-isopropylpurine]		ALX-270-396-M001 ALX-270-396-M005	1 mg 5 mg	20nM (B) [43]					
Olomoucine, Iso- [6-Benzylamino-2-(2-hydroxyethylamino)-7-methylpurine]		ALX-350-090-M005 ALX-350-090-M025	5 mg 25 mg	>500µM (B) [28]		>1M (D1) [28]	>1M (p35) [28]		
Olomoucine, N⁹-Isopropyl- [6-Benzylamino-2-(2-hydroxyethylamino)-9-isopropylpurine]		ALX-270-397-M001 ALX-270-397-M005	1 mg 5 mg	2µM (B) [28]			3µM (p35) [28]		
Olomoucine, Dimethylamino- [6-Benzylamino-2-(2-dimethylaminoethyl)amino-9-methylpurine]		ALX-350-054-M005	5 mg	>100µM (B) [28]			140µM (p35) [28]		
PNU 112455A . HCl [N⁴-(6-Aminopyrimidin-4-yl)-sulfanilamide . HCl]		ALX-270-398-M001 ALX-270-398-M005	1 mg 5 mg		K_i=2µM (E) [44]		K_i=2µM (p25) [44]		erk2: >100µM [44]
Purvalanol A [6-[(3-Chloro)anilino]-2(1R)-(isopropyl-2-hydroxy-ethylamino)-9-isopropylpurine]		ALX-270-246-M001 ALX-270-246-M005	1 mg 5 mg	4nM (B) [19]	70nM (A) [19] 100nM (A) [3] 35nM (E) [19]	850nM (D1) [19]	75nM (p35) [19]	>10µM (β) [19]	CK1: >3.3µM [19] CK2: >10µM [19] DYRK1a: 300nM [3] erk1: 9µM [19] IRTK: 5µM [19] JNK: >1µM [19] RSK1: 1.49µM [3]
RO-3306 [(5Z)-2-(Thiophen-2-yl) methylamino)-5-((quinolin-6-yl) methylene)thiazol-4(5*H*)-one]		ALX-270-463-M001 ALX-270-463-M005	1 mg 5 mg	K_i=20nM [45]					
(R)-Roscovitine [2-(R)-(2-Ethyl-2-hydroxy-ethylamino)-6-benzylamino-9-isopropylpurine]		ALX-350-251-M001 ALX-350-251-M005 ALX-350-251-M050	1 mg 5 mg 50 mg	200nM [41]	700nM (A) [42] 250nM (A) [3] 700nM (E) [42]	>100µM (D1) [42]	160nM (p35) [42]	130µM [46]	**CDK6 (D3)**: >100µM (D3) [42] CK1: 17µM [3] DYRK1a: 3.1µM [3] erk1: 34µM [42] erk2: 14µM [42] IRTK: 70µM [42] MLCK: 90µM [42] PKC: >100µM [42] c-Src: 250µM [42]
(S)-Roscovitine 2-(S)-(2-Ethyl-2-hydroxy-ethylamino)-6-benzylamino-9-isopropylpurine]		ALX-350-293-M001	1 mg	800nM [41]					
Scytonemin [SCY]		ALX-350-376-M001	1 mg	3.0µM [47]					PKCβ2: 2.7µM [47] Myt1: 1.2µM [47] Chk1: 1.4µM [47] PLK1: 2.0µM [47]
Staurosporine		ALX-380-014-C100 ALX-380-014-C250 ALX-380-014-M001 ALX-380-014-M005	100 µg 250 µg 1 mg 5 mg	6nM (B) [48, 49] 5nM (B) [35]	7nM (A) [48]	<10µM (D1) [48]	4nM (p25) [35]	15nM (β) [35]	Non-selective protein kinase inhibitor. Chk1: 8nM [49] PKC: 5nM [49]
SU9516 [3-(1-(3*H*-Imidazol-4-yl)-meth-(*Z*)-ylidene)-5-methoxy-1,3-dihydro-indol-2-one]		ALX-270-400-M005 ALX-270-400-M025	5 mg 25 mg	40nM (B) [50]	22nM (A) [50]	200nM (D1) [50]			EGFR: >100µM [50] FLK: 130nM [51] p38: >10µM [50] PDGFR: 18µM [50] PKC: >10µM [50] c-Src: 11µM [51]
UCN-01 [7-Hydroxystaurosporine]		ALX-380-222-MC25 ALX-380-222-M001	0.25 mg 1 mg	31nM [52]	42nM [52]	32nM [52]			**CDK6**: 58nM [52]

LEGEND: (A) = Cyclin A; (B) = Cyclin B; (E) = Cyclin E; (D1), (D2), (D3) = Cylin D1, D2, D3. **NOTE:** The IC_{50} value of all ATP-competitive kinase inhibitors strongly depends on the ATP concentration in the assay leading to different published IC_{50} values and thus specificity of the inhibitor.

LITERATURE REFERENCES:

[1] Aloisines, a new family of CDK/GSK-3 inhibitors. SAR study, crystal structure in complex with CDK2, enzyme selectivity, and cellular effects:Y. Mettey, et al.; J. Med. Chem. **46,** 222 (2003) ▪ **[2]** Paullones are potent inhibitors of glycogen synthase kinase-3beta and cyclin-dependent kinase 5/p25: M. Leost, et al.; Eur. J. Biochem. **267,** 5983 (2000) ▪ **[3]** The specificities of protein kinase inhibitors: an update: J. Bain, et al.; Biochem. J. **371,** 199 (2003) ▪ **[4]** Pyrazolo[3,-b]quinoxalines. A new class of cyclin-dependent kinases inhibitors: M.A. Ortega, et al.; Bioorg. Med. Chem. **10,** 2177 (2002) ▪ **[5]** Synthesis and application of functionally diverse 2,6,9-trisubstituted purine libraries as CDK inhibitors: Y.T. Chang, et al.; Chem. Biol. **6,** 361 (1999) ▪ **[6]** Synthesis of quinolinyl/isoquinolinyl[a]pyrrolo [3,4-c] carbazoles as cyclin D1/CDK4 inhibitors: G. Zhu, et al.; Bioorg. Med. Chem. Lett. **13,** 1231 (2003 ▪ **[7]** The p16 status of tumor cell lines identifies small molecule inhibitors specific for cyclin-dependent kinase 4: A. Kubo, et al.; Clin. Cancer Res. **5,** 4279 (1999) ▪ **[8]** Evaluation of the first cytostatically active 1-aza-9-oxafluorenes as novel selective CDK1 inhibitors with P-glycoprotein modulating properties: K. Brachwitz, et al.; J. Med. Chem. **46,** 876 (2003) ▪ **[9]** Discovery and SAR of 2-aminothiazole inhibitors of cyclin-dependent kinase 5/p25 as a potential treatment for Alzheimer's disease: C.J. Helal, et al.; Bioorg. Med. Chem. Lett. **14,** 5521 (2004) ▪ **[10]** Antiproliferative effect of plant cytokinin analogues with an inhibitory activity on cyclin-dependent kinases: K. Vermeulen, et al.; Leukemia **16,** 299 (2002) ▪ **[11]** see **[10]** ▪ **[12]** Borrelidin inhibits a cyclin-dependent kinase (CDK), Cdc28/Cln2, of Saccharomyces cerevisiae: E. Tsuchiya, et al.; J. Antibiot. (Tokyo) **54,** 84 (2001) ▪ **[13]** Synthesis, structure-activity relationship, and biological studies of indolocarbazoles as potent cyclin D1-CDK4 inhibitors: G. Zhu, et al.; J. Med. Chem. **46,** 2027 (2003) ▪ **[14]** Butyrolactone I, a selective inhibitor of cdk2 and cdc2 kinase: M. Kitagawa, et al.; Oncogene **8,** 2425 (1993) ▪ **[15]** A cyclin-dependent kinase inhibitor, butyrolactone I, inhibits phosphorylation of RB protein and cell cycle progression: M. Kitagawa, et al.; Oncogene **9,** 2549 (1994) ▪ **[16]** 2,6,9-trisubstituted purines: optimization towards highly potent and selective CDK1 inhibitors: P. Imbach, et al.; Bioorg. Med. Chem. Lett. **9,** 91 (1999) ▪ **[17]** 1-Acyl-1H-[1,2,4]triazole-3,5-diamine analogues as novel and potent anticancer cyclin-dependent kinase inhibitors: synthesis and evaluation of biological activities: R. Lin, et al.; J. Med. Chem. **48,** 4208 (2005) ▪ **[18]** Imidazo[2,1 -b]thiazolylmethylene- and indolylmethylene-2-indolinones: a new class of cyclin-dependent kinase inhibitors. Design, synthesis, and CDK1/cyclin B inhibition: A. Andreani, et al.; Anticancer Drug Des. **15,** 447 (2000) ▪ **[19]** Exploiting chemical libraries, structure, and genomics in the search for kinase inhibitors: N.S. Gray, et al.; Science **281,** 533 (1998) ▪ **[20]** CR8, a potent and selective, roscovitine-derived inhibitor of cyclin-dependent kinases: K. Bettayeb, et al.; Oncogene, **Epub ahead of print** (2008) ▪ **[21]** CVT-313, a specific and potent inhibitor of CDK2 that prevents neointimal proliferation: E.E. Brooks, et al.; J. Biol. Chem. **272,** 29207 (1997) ▪ **[22]** Paullones, a series of cyclin-dependent kinase inhibitors: synthesis, evaluation of CDK1/cyclin B inhibition, and in vitro antitumor activity: C. Schultz, et al.; J. Med. Chem. **42,** 2909 (1999) ▪ **[23]** Structure-based design modifications of the paullone molecular scaffold for cyclin-dependent kinase inhibition: R. Gussio, et al.; Anticancer Drug Des. **15,** 53 (2000) ▪ **[24]** Genetic selection of peptide aptamers that recognize and inhibit cyclin-dependent kinase 2: P. Colas, et al.; Nature **380,** 548 (1996) ▪ **[25]** Selective killing of transformed cells by cyclin/cyclin-dependent kinase 2 antagonists: Y.N. Chen, et al.; PNAS **96,** 4325 (1999) ▪ **[26]** Inhibition of the G2 DNA damage checkpoint and of protein kinases Chk1 and Chk2 by the marine sponge alkaloid debromohymenialdisine: D. Curman, et al.; J. Biol. Chem. **276,** 17914 (2001) ▪ **[27]** Aldisine alkaloids from the Philippine sponge Stylissa massa are potent inhibitors of mitogen-activated protein kinase kinase-1 (MEK-1): D. Tasdemir, et al.; J. Med. Chem. **45,** 529 (2002) ▪ **[28]** Inhibition of cyclin-dependent kinases by purine analogues: J. Vesely, et al.; Eur. J. Biochem. **224,** 771 (1994) ▪ **[29]** Inhibition of cyclin-dependent kinase 4 (Cdk4) by fascaplysin, a marine natural product: R. Soni, et al.; BBRC **275,** 877 (2000) ▪ **[30]** Potent inhibition of CDC2 kinase activity by the flavonoid L86-8275: M.D. Losiewicz, et al.; BBRC **201,** 589 (1994) ▪ **[31]** Flavopiridol induces G1 arrest with inhibition of cyclin-dependent kinase (CDK) 2 and CDK4 in human breast carcinoma cells: B.A. Carlson, et al.; Cancer Res. **56,** 2973 (1996) ▪ **[32]** Inhibition of cyclin-dependent kinases, GSK-3beta and CK1 by hymenialdisine, a marine sponge constituent: L. Meijer, et al.; Chem. Biol. **7,** 51 (2000) ▪ **[33]** Protein kinase MARK/PAR-1 is required for neurite outgrowth and establishment of neuronal polarity: J. Biernat, et al.; Mol. Biol. Cell. **13,** 4013 (2002) ▪ **[34]** Indirubin, the active constituent of a Chinese antileukaemia medicine, inhibits cyclin-dependent kinases: R. Hoessel, et al.; Nat. Cell Biol. **1,** 60 (1999) ▪ **[35]** Indirubins inhibit glycogen synthase kinase-3 beta and CDK5/p25, two protein kinases involved in abnormal tau phosphorylation in Alzheimer's disease. A property common to most cyclin-dependent kinase inhibitors?: S. Leclerc, et al.; J. Biol. Chem. **276,** 251 (2001) ▪ **[36]** Kinase inhibitors: not just for kinases anymore: S.L. McGovern and B.K. Shoichet; J. Med. Chem. **46,** 1478 (2003) ▪ **[37]** Discovery and initial characterization of the paullones, a novel class of small-molecule inhibitors of cyclin-dependent kinases: D.W. Zaharevitz, et al.; Cancer Res. **59,** 2566 (1999) ▪ **[38]** Identification of novel purine and pyrimidine cyclin-dependent kinase inhibitors with distinct molecular interactions and tumor cell growth inhibition profiles: C.E. Arris, et al.; J. Med. Chem. **43,** 2797 (2000) ▪ **[39]** Structure-based design of a potent purine-based cyclin-dependent kinase inhibitor: T.G. Davies, et al.; Nat. Struct. Biol. **9,** 745 (2002) ▪ **[40]** Potentiation of paclitaxel-induced apoptosis by the novel cyclin-dependent kinase inhibitor NU6140: a possible role for survivin down-regulation: M. Pennati, et al.; Mol. Cancer Ther. **4,** 1328 (2005) ▪ **[41]** Cytokinin-derivated cyclin-dependent kinase inhibitors: synthesis and cdc2 inhibitory activity of olomoucine and related compounds: L. Havlicek, et al.; J. Med. Chem. **40,** 408 (1997) ▪ **[42]** Chemical inhibitors of cyclin-dependent kinases: L. Meijer & S.H. Kim; Methods Enzymol. **283,** 113 (1997) ▪ **[43]** Synthesis and biological activity of olomoucine II: V. Krystof, et al.; Bioorg. Med. Chem. Lett. **12,** 3283 (2002) ▪ **[44]** The cyclin-dependent kinases cdk2 and cdk5 act by a random, anticooperative kinetic mechanism: P.M. Clare, et al.; J. Biol. Chem. **276,** 48292 (2001) ▪ **[45]** Selective small-molecule inhibitor reveals critical mitotic functions of human CDK1: L.T. Vassilev, et al.; PNAS **103,** 10660 (2006) ▪ **[46]** Inhibition of cyclin-dependent kinases by purine analogues: crystal structure of human cdk2 complexed with roscovitine: W.F. De Azevedo, et al.; Eur. J. Biochem. **243,** 518 (1997) ▪ **[47]** The identification and characterization of the marine natural product scytonemin as a novel antiproliferative pharmacophore: C.S. Stevenson, et al.; J. Pharmacol. Exp. Ther. **303,** 858 (2002) ▪ **[48]** Protein kinase inhibition by staurosporine revealed in details of the molecular interaction with CDK2: A.M. Lawrie, et al.; Nat. Struct. Biol. **4,** 796 (1997) ▪ **[49]** An indolocarbazole inhibitor of human checkpoint kinase (Chk1) abrogates cell cycle arrest caused by DNA damage: J.R. Jackson, et al.; Cancer Res. **60,** 566 (2000) ▪ **[50]** A novel cdk2-selective inhibitor, SU9516, induces apoptosis in colon carcinoma cells: M.E. Lane, et al.; Cancer Res. **61,** 6170 (2001) ▪ **[51]** Novel pyrrolylactone and pyrrolyllactam indolinones as potent cyclin-dependent kinase 2 inhibitors: X. Li, et al.; Bioorg. Med. Chem. Lett. **13,** 1939 (2003) ▪ **[52]** UCN-01, 7-hydroxyl-staurosporine, inhibits kinase activity of cyclin-dependent kinases and reduces the phosphorylation of the retinoblastoma susceptibility gene product in A549 human lung cancer cell line: K. Kawakami, et al.; BBRC **219,** 778 (1996)