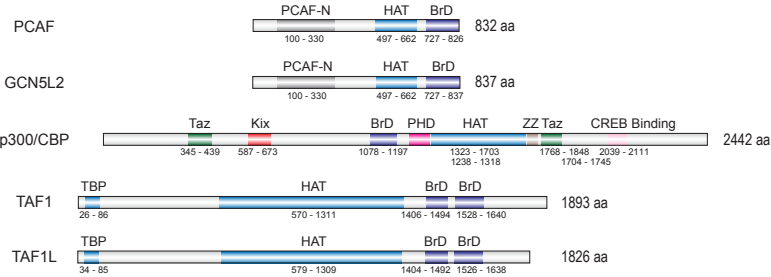
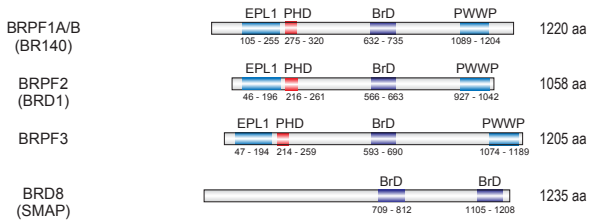


Group I. Histone acetyltransferases

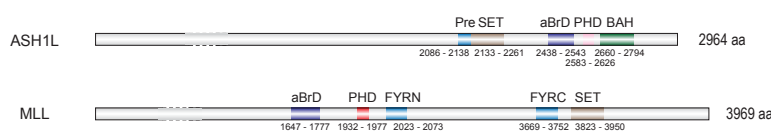
Group Ia. HATs



Group Ib. MOZ HATs

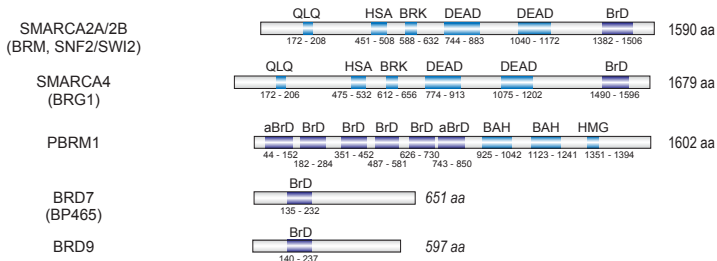


Group II. Histone methyltransferases

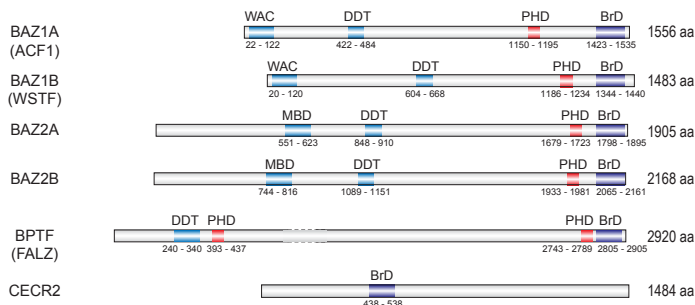


Group III. Chromatin remodeling factors

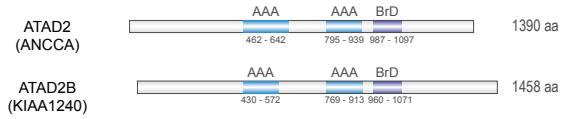
Group IIIa. SWI/SNF complexes



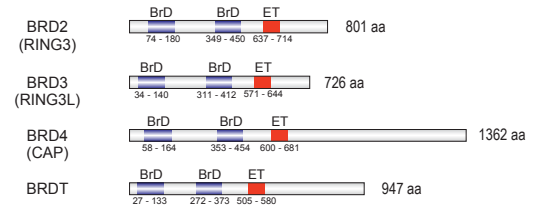
Group IIIb. ISWI complexes



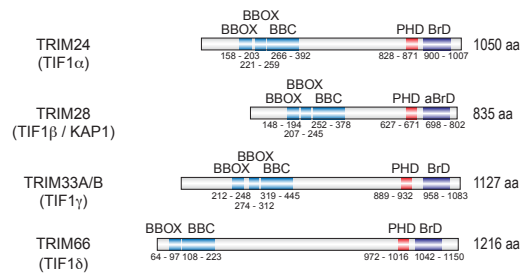
Group IV. AAA ATPase proteins



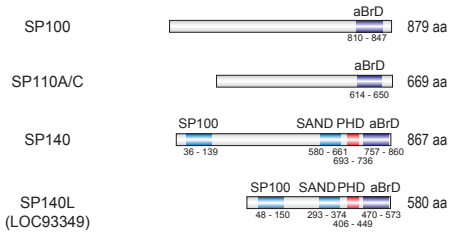
Group V. BET family transcriptional coactivators



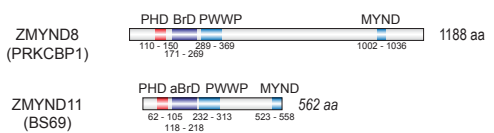
Group VI. E3 SUMO/ubiquitin ligases



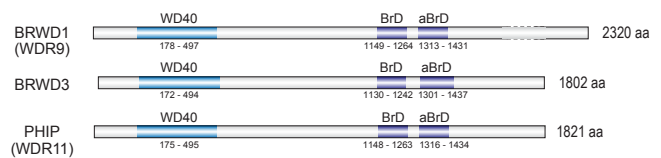
Group VII. SP family proteins of PML nuclear bodies



Group VIII. Transcriptional corepressors



Group IX. WD-repeat proteins



Supplementary Figure 1. Human bromodomain proteins grouped based on their functions in regulation of gene transcription in chromatin. Key functional domains in each protein are shown as indicated with the BrD highlighted in purple. Note that 'aBrD' is regarded as atypical BrD that does not contain a conserved Asn residue required for acetyl-lysine recognition through a hydrogen bonding interaction.

Supplementary Table 1. Bromodomain inhibitors in human clinical trials

Compounds	Organization	Indication	Phase/Status/start date	NCT Identifier*
GSK525762 (Molibresib)	GlaxoSmithKline	Solid Tumors	2/Withdrawn/Dec. 2017	NCT03266159
		NUT Midline Carcinoma (NMC)	1/Completed/Mar. 2020	NCT01587703
		Neoplasms (+Fulvestrant)	1/Completed/Jan. 2022	NCT02964507
GSK2820151* OTX015 (Birabresib)	GlaxoSmithKline	Cancer/ Neoplasms	2/Terminated/ Feb. 2020	NCT02630251
	Oncoethix GmbH	AML (+Azacytidine)	1, 2/Withdrawn/Sep. 2016	NCT02303782
RO6870810 (TEN-0101)	Merck Sharp & Dohme LLC Hoffmann-La Roche	Acute Myeloid Leukemia (AML), Diffuse Large B-cell Lymphoma (DLBCL), Acute Lymphoblastic Leukemia (ALL), Multiple Myeloma (MM)	1/Completed/Jan. 2021	NCT01713582
		NMC, Triple Negative Breast Cancer (TNBC), Non-small Cell Lung Cancer (NSCLC) with Rearranged ALK Fusion Protein or KRAS Mutation, Castrate-resistant Prostate Cancer (CRPC), Pancreatic Ductal Adenocarcinoma	1/Completed/Jan. 2021	NCT02259114
		Glioblastoma Multiforme	2/Terminated/ Jan. 2021	NCT02296476
		NMC, TNBC, NSCLC, CRPC	1/Terminated/Jan. 2021	NCT02698176
		AML (AML <i>de Novo</i> and AML Secondary to MDS), DLBCL	1/Terminated/Oct. 2021	NCT02698189
		AML, Myelodysplastic Syndromes (MDS)	1/Completed/Dec. 2017	NCT02308761
CPI-0610 (Pelabresib)	Constellation/ MorphoSys	Advanced Solid Tumors	1/Completed/Jan. 2018	NCT01987362
		MM	1/Completed/Feb. 2020	NCT03068351
		Advanced Ovarian Cancer, TNBC (+Atezolizumab)	1/Terminated/Nov. 2020	NCT03292172
		DLBCL, High-Grade B-cell Lymphoma	1/Completed/Jan. 2022	NCT03255096
		Peripheral Nerve Tumors	2/Withdrawn/Sep. 2018	NCT02986919
		Lymphoma	1/Completed/May 2022	NCT01949883
		MM	1/Completed/May 2022	NCT02157636
		Myelofibrosis (MF), AML, Myelodysplastic/Myeloproliferative Neoplasm, MDS, Preleukemia, Primary MF, Bone Marrow Disease, Hematological Disease, Precancerous Conditions, Neoplasms, Leukemia, Neoplasms by Histologic Type, Essential Thrombocytosis (+Ruxolitinib)	1,2/Recruiting/May 2022	NCT02158858
		Advanced Malignancies, Solid Tumor, Hematological Malignancy	1/ Recruiting/May. 2022	NCT05391022
		Myelofibrosis, Primary MF, Post-polycythemia Vera MF, Post-essential Thrombocytopenia MF (+Ruxolitinib)	3/Recruiting/June 2022	NCT04603495
ABBV-075 (Miverbresib)	AbbVie	Cancer, Breast Cancer, NSCLC, AML, MM, PC, Small Cell Lung Cancer (SCLC), Non-Hodgkins Lymphoma (NHL) (+Venetoclax)	1/Completed/Nov. 2019	NCT02391480
		ABBV-744	MF (+Navitoclax, +Ruxolitinib)	1/ Recruiting/July 2020
INCB057643	Incyte	AML	1/Terminated/Mar. 2021	NCT03360006
		MF, MDS, Myelodysplastic/Myeloproliferative Neoplasm Overlap Syndrome, Myeloproliferative Neoplasm, Relapsed or Refractory Primary MF, Secondary MF (Post-Polycythemia Vera MF, Post-Essential Thrombocytopenia MF) (+Ruxolitinib)	1/Recruiting/ Feb. 2020	NCT04279847
CC-90010	Celgene	Solid Tumors (+Gemcitabine, +Paclitaxel, +Rucaparib, +Abiraterone, +Ruxolitinib, +Azacitidine)	1, 2/Terminated/Apr. 2022	NCT02711137
		NHL, Neoplasms	1/Active, not recruiting/July 2017	NCT03220347
		Glioblastoma + Temozolomide	1/ Recruiting/Mar. 2020	NCT04324840
BMS-986158	Bristol-Myers Squibb Dana-Farber Cancer	Astrocytoma, Glioblastoma	1/Active, not recruiting/Jan. 2022	NCT04047303
		Advanced Tumors (+Nivolumab)	1,2/Completed/Feb. 2022	NCT02419417
PLX51107	Plexxikon/ Daiichi Sankyo	Solid Tumor, Childhood, Lymphoma, Brain Tumor, Pediatric	1/Recruiting/Jan. 2022	NCT03936465
CCS1477	CellCentric Ltd	AML, MDS, Myelodysplastic/Myeloproliferative Neoplasm, Myeloproliferative Neoplasm	1/Recruiting/Mar. 2020	NCT04022785
		mCRPC, Advanced Solid Tumors	1, 2/Recruiting/ June 2018	NCT03568656
INCB05432 RVX-208 (Apabetalone)	Incyte Resverlogix Corp	Hematological Malignancy, AML, NHL, MM	1, 2/Recruiting/Aug. 20	NCT04068597
		Solid Tumors and Hematologic Malignancy	1, 2/Terminated/June 2019	NCT02431260
ZEN-3694**	Laval University Steeve Provencher Zenith Epigenetics Haider Mahdi NCI	Coronary Artery Disease	2/Completed/June 2013	NCT01067820
		Diabetes	2/Completed/APR. 2014	NCT01728467
		Dyslipidemia, Coronary Artery Disease	2/Terminated/ May 2015	NCT01863225
		Dyslipidemia, Atherosclerosis, Acute Coronary Syndrome, Cardiovascular Disease	1, 2/Completed/July 2016	NCT00768274
		Atherosclerosis, Coronary Artery Disease	2/Completed/July 2016	NCT01058018
		Kidney Failure, Chronic	1, 2/Not yet recruited/July 2019	NCT03160430
		Diabetes Mellitus, Type 2, coronary artery disease (+Atorvastatin, +Rosuvastatin)	3/Completed/Aug. 2021	NCT02586155
		Pulmonary Arterial Hypertension	2/ Not yet recruiting/Apr. 2022	NCT04915300
		Pulmonary Arterial Hypertension	Early 1/Completed/Apr. 2022	NCT03655704
		Metastatic CRPC (+Enzalutamide)	2/Recruiting/Feb. 2022	NCT04986423
BAY1238097 SF1126	Bayer SignalRX	TNBC (+Talazoparib)	2/Active, Not recruiting/Feb 2022	NCT03901469
		mCRPC, PC, Metastatic Prostate Small Cell Carcinoma, Stage IV PC AJCC v8, Stage IVA PC AJCC v8, Stage IVB PC AJCC v8 (+Enzalutamide)	2/Recruiting/Mar. 2022	NCT04471974
		Ovarian Cancer, Peritoneal Cancer, Fallopian Tube Cancer (+Talazoparib)	2/Recruiting/ May 2022	NCT05071937
BAY1238097	Bayer	Metastatic NMC, Unresectable NMC (+Cisplatin, +Etoposide)	1,2/Recruiting/May 2022	NCT05019716
		Metastatic Solid Neoplasm, Metastatic or Unresectable NMC (+Abemaciclib)	1/Not yet recruiting/May 2022	NCT05372640
SF1126	SignalRX	Neoplasms	1/Terminated/Mar 2016	NCT02369029
		Advanced Hepatocellular Carcinoma (+Nivolumab)	1/Terminated/May 2022	NCT03059147

* More details at <https://clinicaltrials.gov>; ** Structure not reported.