

## Recent patents in epigenetic targeting

Patent number	Description	Assignee	Inventor	Date
US 9,150,921	Methods and materials for detecting genetic and/or epigenetic elements, e.g., the presence or absence of target nucleic acid containing a genetic or epigenetic element, the amount of target nucleic acid containing a genetic or epigenetic element within a sample, kits for detecting the presence or absence of target nucleic acid containing a genetic or epigenetic element, kits for detecting the amount of target nucleic acid containing a genetic or epigenetic element present within a sample, and methods for making such kits.	Cascade Biosystems (Colfax, WI, USA)	Smith KD, Yazvenko N, Smit M	10/6/2015
US 9,034,574	Methods for discovering agents that are effective in reversing epigenetic silencing by inhibiting the interaction of methyl-binding (MBD) proteins with methylated genomic DNA. Also, methods for reactivating silenced genes having CpG island hypermethylation along with methods for treatment and prevention of diseases, such as cancer and sickle cell anemia, by administering an agent that modulates MBD protein-mediated transcriptional repression, thereby increasing gene transcription to prevent or treat disease.	The Johns Hopkins University (Baltimore)	Nelson WG, Yegnasubramanian S, Lin X, Speed TJ, Reichert Z	5/19/2015
US 8,969,046	A method of detecting a predisposition to, or the incidence of, cancer in a sample comprises detecting an epigenetic change in at least one gene selected from an NDRG4/NDRG2 subfamily gene, GATA4, OSMR, GATA5, SFRP1, ADAM23, JPH3, SFRP2, APC, MGMT, TFP12, BNIP3, FOXE1, SYNE1, SOX17, PHACTR3 and JAM3, wherein detection of the epigenetic change is indicative of a predisposition to, or the incidence of, cancer. Also, pharmacogenetic methods for determining suitable treatment regimens for cancer and methods for treating cancer patients, based on selection of the patients according to the methods of the invention.	MDxHealth (Liege, Belgium)	Van Engeland M, De Bruine MA, Griffioen A, Louwagie J, Bierau K, Brichard G, Otto G, Penning M	3/3/2015
US 8,846,932	Methods and compositions for modulating the function of transcription factors, especially transcription factors that recruit epigenetic regulators (histone modifying enzymes) to specific DNA promoters. The targeted transcription factors include but are not limited to the myocyte enhancing factor (MEF2), the forkhead/winged helix transcription factor FOXP3, and the transcription factor GATA3. Also, small molecule modulators of MEF2 and its associated factors that include but not limited to histone deacetylases (HDACs), p300/CBP and Cabin1 and the therapeutic applications thereof.	University of Southern California (Los Angeles)	Chen L, Jayathilaka N, Han A, Petasis NA	9/30/2014
US 8,788,283	A method, software, database, and system for determining modifiable lifestyle attributes, which, when altered, can increase the longevity of an individual. Based on an individual's pangenetic (genetic and epigenetic) attributes and by comparison with databases of attributes and longevity data, specific modifiable attributes that increase longevity, based on the individual's specific pangenetic makeup, can be identified.	Expanse Bioinformatics (Furlong, PA, USA)	Kenedy AA, Eldering CA	7/22/2014
US 8,703,419	A method for the diagnosis and prognosis of cancers using an epigenetic marker consisting of a specific single CpG site in the tristetraproline (TTP) promoter and treatment of cancers by regulating its epigenetic status. Particularly, a method for the diagnosis and prognosis of liver cancer by measuring specific methylation of C, the 32.sup.nd residue of the nucleic acid sequence represented by seq. id. no. 41, and a method for treatment of cancer by regulating the same.	Korea Research Institute of Bioscience and Biotechnology (Daejeon, South Korea)	Yeom YI, Sohn BH, Park IY, Lee JJ, Jang Y, Yang SJ, Park KC, Yoo HS, Choi JY	4/22/2014
US 8,642,602	Methods of inhibiting fibrogenesis, including liver fibrogenesis and secondary disease states and conditions thereof, and in treating liver damage, including cirrhosis of the liver (which may be caused by viruses or chemicals, including alcohol), using certain nucleoside compounds and/or antibodies, which are optionally conjugated.	University of Georgia Research Foundation (Athens, GA, USA), Newcastle University (Newcastle upon Tyne, UK)	Mann J, Chu CK, Mann DA	2/4/2014
US 8,440,404	Methods and compositions for obtaining epigenetic information, such as DNA methylation patterns, through the preparation, amplification and analysis of methylome libraries. In particular, preparation of a DNA molecule by digesting the DNA molecule with at least one methylation-sensitive restriction enzyme, incorporating a nucleic acid molecule into at least some of the digested DNA molecules.	Rubicon Genomics (Ann Arbor, MI, USA)	Makarov VL, Kamberov E, Sun T, Pinter JH, Tarrier BJ, Bruening EE, Kurihara T, Tesmer T, M'Mwirichia J	5/14/2013
US 8,426,136	A method for determining sensitivity of a cell population to apoptosis induced by Smac mimetics as a single agent or in combination with other chemodrugs, comprising assaying for an epigenetic modification at the TNF $\alpha$ locus in the cell population as compared to the TNF $\alpha$ locus in a cell population not sensitive to apoptosis induced by Smac mimetics as a single agent or in combination with other chemodrugs, wherein the presence of the epigenetic modification indicates that the cell population is sensitive to apoptosis induced by Smac mimetics as a single agent or in combination with other chemodrugs.	Joyant Pharmaceuticals (Dallas, TX, USA)	Wang L, Probst BL	4/23/2013

Source: US Patent and Trademark Office (<http://www.uspto.gov>); European Patent Office (<http://www.epo.org>).