EPISIGN V2 list of disorders and genes (page 1 of 3)

Trinucleotide expansion repeat

Abbreviation	Disorder	Confirmed underlying genes
DIP2B	Mental retardation, FRA12A type	*DIP2B* promoter
FXS	Fragile X syndrome (Affected males ONLY)	*FMR1* promoter

Imprinting defect

Abbreviation	Disorder	Confirmed underlying genes
Angelman	Angelman syndrome	*SNRPN* promoter
BWS	Beckwith-Wiedemann syndrome	Both *ICF1* and *ICF2* on Chr 11
KOS	Kagami-Ogatta syndrome	*MEG3* promoter
PWS	Prader-Willi syndrome	*SNRPN* promoter
SRS	Silver Russel syndrome	UPD11 (both *ICF1* and *ICF2*), UPD7
Temple	Temple syndrome	*MEG3* promoter

Epi-signature

Abbreviation	Disorder	Confirmed underlying genes
ADCADN	Cerebellar ataxia, deafness, and narcolepsy, autosomal dominant	*DNMT1*
ATRX	Alpha-thalassemia mental retardation syndrome	*ATRX*
AUTS18	Autism, susceptibility to, 18	*CHD8*[1]
BAFopathy	BAFopathies: Coffin-Siris (CSS1-4,8) & Nicolaides-Baraitser (NCBRS) syndromes[2]	*ARID1A, ARID1B, SMARCB1, SMARCA4, SMARCA2*
BISS	Blepharophimosis Intellectual disability SMARCA2 Syndrome	*SMARCA2*
BFLS	Börjeson-Forssman-Lehmann syndrome	*PHF6*[1]
CdLS	Cornelia de Lange syndrome[3]	*NIPBL, RAD21, SMC3, SMC1A*
CHARGE	CHARGE syndrome	*CHD7*
Down	Down syndrome	Chr21 trisomy
Dup7	Chr7q11.23 duplication syndrome	Chr7q11.23 duplication
EEOC	Epileptic encephalopathy, childhood-onset	*CHD2*
FLHS	Floating Harbour syndrome	*SRCAP*
GTPTS	Genitopatellar syndrome	*KAT6B*

[1] Episignatures based on small data sets, mild methylation differences or single reference centers may have a greater chance of uncertain or false negative results.

[2] Patients with other BAFopathy genes may be detected, but not confirmed in our experiments.

[3] Male CdLS5 patients (HDAC8 mutations) may be detected, but not confirmed in our experiments.

Epi-signature

Abbreviation	Disorder	Confirmed underlying genes
HMA	Hunter McAlpine syndrome	Chr5q35-qter duplication involving *NSD1*
HVDAS_T	Helsmoortel-van der Aa syndrome (ADNP syndrome [Terminal] -outside c.2000-2340)	*ADNP*
HVDAS_C	Helsmoortel-van der Aa syndrome (ADNP syndrome [Centrall] -between c.2000-2340)	*ADNP*
ICF1	Immunodeficiency-centromeric instability-facial anomalies syndrome type 1	*DNMT3B1*
ICF2_3_4	Immunodeficiency-centromeric instability-facial anomalies syndrome types 2-4	*CDCA711*[1], *ZBTB24*[1], *HELLS*[1]
Kabuki	Kabuki syndrome	*KMT2D, KDM6A*
KDVS	Koolen de Vreis syndrome	*KANSL1*
Kleefstra	Kleefstra syndrome	*EHMT1*
MRD23	Mental retardation, autosomal dominant 23	*SETD5*[1]
MRD51	Mental retardation, autosomal dominant 51[4]	*KMT5B*[1]
MRX93	Mental retardation, X-linked 93[4]	*BRWD3*[1]
MRX97	Mental retardation, X-linked 97	*ZNF711*[1]
MRXSCJ	Mental retardation, X-linked, syndromic, Claes-Jensen type[4]	*KDM5C*
MRXSN	Mental retardation, X-linked syndromic, Nascimento-type	*UBE2A*
MRXSSR	Mental retardation, X-linked, Snyder-Robinson type	*SMS*[1]
PRC2	PRC2 complex disorders (Weaver and Cohen-Gibson syndromes)	*EZH2, EED*
RMNS	Rahman syndrome	*HIST1H1E*
RSTS	Rubinstein-Taybi syndrome	*CREBBP, EP300*
SBBYSS	SBBYSS syndrome	*KAT6B*[1]
SETD1B	SETD1B-related syndrome	*SETD1B*
Sotos	Sotos syndrome	*NSD1*
TBRS	Tatton-Brown-Rahman syndrome	*DNMT3A*
WDSTS	Wiedemann-Steiner syndrome	*KMT2A*
WHS	Wolf-Hirschhorn syndrome	Chr4p16.13 deletion
Williams	Williams syndrome	Chr7q11.23 deletion

Disclaimer (plus see next page):

The EpiSign test can be used to confirm a clinical diagnosis or a possible diagnosis based on the presence of a variant of unknown significance.

In case a patient does not have the syndrome's specific methylation profile, it does not necessarily exclude the diagnosis or the pathogenicity of the VUS.

It has been shown that different pathogenic variants in a gene can result in different phenotypes and/or different methylation signatures (for example for ADNP, KAT6B, SMARCA2).

[4] Healthy carriers and those with incomplete penetrance are detectable.

Disclaimer – continued:

It remains possible that a new variant causes a methylation pattern different from the ones currently known.

Also, some conditions or genes have mild signatures or signatures based on a small cohort size. These conditions may have a higher false negative result rate or higher chance of an uncertain result.

Patients carrying mosaic variants or females tested for X-linked conditions may have a weak signature or a potentially false negative result.