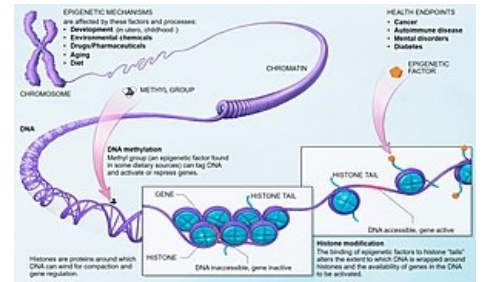


Epigenetics

Epigenetics is a little-explored way of transmitting hereditary information. Some traits may not be encoded in nucleic acids (DNA and RNA) and still be transmitted. It is epigenetic mechanisms that can influence phenotype without changing genotype.^[1] Epigenetic mechanisms are applied at a number of levels (pre-transcriptional and post-transcriptional, but also pre-translational and post-translational). They are important in morphogenesis and in the process of cell differentiation^[1]. Epigenetic mechanisms are, for example, histone acetylation or DNA methylation. In human genetics, epigenetics is used, for example, X-chromosome inactivation and within Genomic Imprinting^[1]. Gene imprinting is associated with a whole range of human pathology.



Illness	Cytogenet. location	Mechanism	Gene(s)
Prader-Willi Syndrome	15q11-q13	deletion, UPD, imprinting disorder	snoRNA
Angelman syndrome	15q11-q13	deletion, UPD, imprinting disorder, duplication	UBE3A
Beckwith-Wiedemann syndrome	11p15.5	UPD, imprinting disorder, duplication	IGF2, CDKN1C
Russell-Silver syndrome	7p11.2	UPD, duplication, inversion	x
Pseudohyperparathyroidism	20q13.2	point mutation, UPD, imprinting defect	GNAS1

Links

- ws::Epigenetika a lidská onemocnění

Related articles

- Genomic Imprinting
- DNA methylation
- Histone modifications
- X-chromosome inactivation
- Gene imprinting and human pathologies

External links

- Epigenetika (česká wikipedie)
- Epigenetics (english wikipedia)
- ws: Epigenetika
- Epigenetic inheritance (<http://archiv.otevrena-veda.cz/users/Image/default/C2Seminare/MultiObSem/011.pdf>)
- Epigenetics is about what we eat, how we live, and how we love each other (<http://www.osel.cz/1516-epigenetika-je-o-tom-co-jime-jak-zijeme-a-jak-se-mame-radi.html>)

Reference

- HALUŠKOVÁ, J. Epigenetic studies in human diseases. *Folia Biologica* [online]. 2010, y. 56, vol. 3, p. 83-96, Available from <http://fb.cuni.cz/Data/files/fovia_biologica/volume_56_2010_3/FB2010A0014.pdf>. ISSN 0015-5500. PMID: 20653993 (<http://www.ncbi.nlm.nih.gov/pubmed/20653993>).