Giving evolution a shove: editing the human genome.

Show Notes

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0:44	He's qualifications [3]
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1:04	He's motives [1]
1:12	He at International Summit on Human Genome Editing
1:35	Designer baby risk [5]
1:58	Human genome and germ line definitions [6] [7]
2:22	Chromosome structure [8]
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2:46	Fertilisation fuses parental DNA [11]
2:53	Allele inheritance [12]
2:56	Gene expression [13]
3:06	Inheritance of genetic predispositions to diseases [14]
3:10	Examples of inherited genetic predispositions
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	- Osteoarthritis [16]
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3:22	Inheritance of resistance to diseases [18]
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4:12	Human Genome project [21]

- 4:21 Human Genome Project timeline [22]
- 4:35 Funding for the Human Genome Project [23]
- 5:08 Genome Reference Consortium [24] [25]
- 5:29 Ethical, Legal and Social Implications program [26]
- 5:54 Nine different gene editing tools [27]
- 6:05 CRISPR/Cas9 editing tool [28]
- 6:05 CRISPR/Cas9 as the Science Breakthrough of the Year for 2015 [29]
- 6:17 He uses CRISPR/Cas9 to edit the DNA for Lulu and Nana [1]
- 6:21 Use of CRIPSR/Cas9 in papers [30] (this source alone has been itself cited over 10 000 times)
- 6:29 Genetic modification of mosquitoes [31]
- 6:34 CRISPR/Cas9 to treat humans for HIV [32]
- 6:42 Experimental treatment of Sickle Cell Disease [33]
- 6:47 CRISPR/Cas9 to treat genetic blindness [34]
- 7:56 He's and his teams motives [1]
- 8:12 Parental HIV conditions leading to low risk of contracting HIV [35]
- 8:24 He's announcement initially praised [36]
- 8:34 Confirmation of unethical procedures and forged documents [37]
- 8:38 He's trial and imprisonment [38] [39]
- 8:42 He's research papers never published [40]
- 8:58 Ethical Guiding Principles for Research on Embryonic Stem Cell [41]
- 9:26 CCR5 edit causing decreased life expectancy [42]
- 10:15 CCR5 causing change in mental cognisance [43]
- 10:36 Gene interactions are more complicated than binary interactions [44]
- 10:54 Speculation that He wished to encourage designer babies [45]
- 11:02 He's research team [1]
- 11:05 Refusal of He's work [2]
- 11:25 US National Institute for Health calls for a 5 year ban [46]

- 11:47 WHO survey [47] [48]
- 12:31 Dr Helen O'Neill's statement [49]
- 13:22 Mass immunisation programs wipe out small pox [50]
- 13:42 Professor Darren Griffin's statement [51]
- $13{:}57\,$ Dr Yalda Jamshidi's statement [52]
- 14:17 Nuffield Council on Bioethics research [53]
- 15:46 Professor Lovell-Badge's statement [54]

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