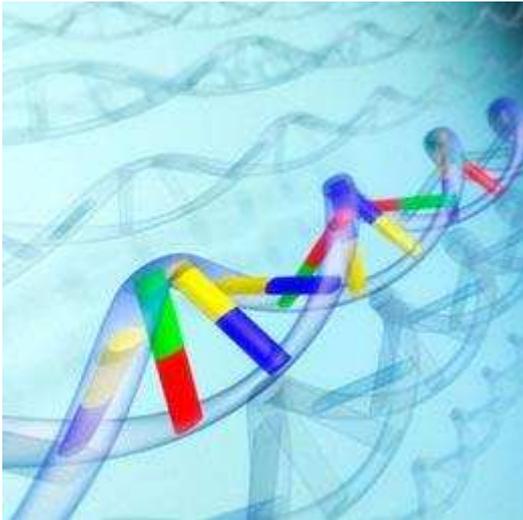


Human genes are multitaskers

Up to 94% of human genes can generate different products.

[Heidi Ledford](#)



Almost all human genes can generate more than one product. *Oleksiy Maksymenko / Alamy*

Although people often struggle to master more than one discipline, our genes are accomplished polymaths. Genome-wide surveys of gene expression in 15 different tissues and cell lines have revealed that up to 94% of human genes generate more than one product.

The surveys, published online on 2 November in *Nature*¹ and *Nature Genetics*², used high-throughput sequencing to generate the most detailed portrait yet of how genes are expressed in different tissues.

Only about 6% of human genes are made from a single, linear piece of DNA. Most genes are made from sections of DNA found at different locations along a strand. The data encoded in these fragments are joined together into a functional messenger RNA (mRNA) molecule that can be used as a template to generate proteins.

But researchers have found that the same gene can be assembled in different ways, sometimes leaving out a piece, for example, or including a bit of the intervening DNA sequence.

More complex than a nematode

This process, called alternative splicing, can produce mRNA molecules and proteins with dramatically different functions, despite being formed from the same gene. The phenomenon provides some solace to those disappointed by the relatively small number of genes in the human genome: with around 20,000 genes, humans

3. Johnson, J.M. *et al.* *Science* **302**, 2141-2144 (2003). | [Article](#) | [PubMed](#) | [ISI](#) | [ChemPort](#) |

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- It's a exciting discovery. It means not only that a breakthrough in the field of biology is coming but also that many other fields may absorb more ideas from biology to resolve their puzzles. Computer scientists, for example, can find some inspiration in this discovery to resolve many difficult problems about the structures of programs and the protocols of Internet. A cell of human beings is the most perfect computer in this world, perfect data structures, perfect algorithms and perfect protocols of communications.
 - 03 Nov, 2008
 - Posted by: **Song Tianqi**
- I agree with the statement: ""What really needs to be done is to develop high-throughput methods for analysing the function of these splice variants," says Blencowe. "That's the big challenge ahead". At this point, we must know what I've demonstated earlier,that gene mutations parallel biological dysfunctions, nowadays bedside assessed: <http://blogs.bmj.com/bmj/2008/10/28/laura-james-on-science-and-journalism/#comments>
<http://www.nature.com/news/2008/081006/full/news.2008.1152.html?q=2#last-comment> http://blogs.nature.com/nm/spoonful/2008/03/gout_gene.html
<http://www.the-scientist.com/blog/display/55106/>
 - 04 Nov, 2008
 - Posted by: **Sergio Stagnaro**