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## Diversity in axon guidance

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Thousands of alternatively spliced forms of an axon guidance receptor may contribute to the specificity of neuronal connections. The receptor, a *Drosophila* homolog of human Down syndrome cell adhesion molecule (DSCAM), was isolated thanks to its affinity with the axon guidance adaptor protein Dock, as reported in the June 9 *Cell* (Schmucker *et al.*, *Cell* 2000, **101**:671-684). Of DSCAM's ten extracellular immunoglobulin (Ig) domains, three of them have 12, 48, and 33 potential alternative sequences, respectively, in tandem arrangements. There are also two alternative transmembrane domains. Of 50 random DSCAM cDNAs, 49 had unique combinations of exons, suggesting that close to the theoretical maximum of 38,016 isoforms may be made by collections of neurons. Multiple isoforms of the human protein have not yet been detected, but an excess of the protein may contribute to neurological defects seen in Down syndrome.

## References

1. DSCAM: a novel member of the immunoglobulin superfamily maps in a Down syndrome region and is involved in the development of the nervous system.
2. *Drosophila* photoreceptor axon guidance and targeting requires the dreadlocks SH2/SH3 adapter protein.
3. Cell Magazine, [<http://www.cell.com/>]