PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

A single gene drives endocrine pancreatic development

ArticleInfo		
ArticleID	:	3981
ArticleDOI	:	10.1186/gb-spotlight-20010216-01
ArticleCitationID	:	spotlight-20010216-01
ArticleSequenceNumber	:	52
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2001–02–16 OnlineDate : 2001–02–16
ArticleCopyright	:	BioMed Central Ltd2001
ArticleGrants	:	
ArticleContext	:	130592211

Kenneth Lee
Email: kenlee_fr@yahoo.fr

By targeting a variety of pancreatic transcription factors to a region of the chick endoderm that is not normally fated for pancreas development, a team from the Department of Molecular and Cellular Biology at Harvard University, led by Doug Melton, has made some surprising discoveries.

The gene *Pdx-1* is thought to be the pancreatic master switch because it is one of the first genes to be expressed during pancreatic development. Reporting in the 15 February Genes and Development, Grapin-Botton *et al.* found that, although *Pdx-1* could initiate pancreas development, on its own the gene was not sufficient to complete the programme of pancreatic development (*Genes Dev* 2001, **15:** 444-454). For example, hormone production was never detected.

The authors found that another transcription factor, encoded by *ngn3*, was sufficient to cause differentiation of pancreatic islet cells that secreted the endocrine hormones glucagon and somatostatin.

One of the approaches currently being explored for treating diabetes is the transplantation into patients of stem cells that have been engineered to secrete endocrine hormones. The work of Grapin-Botton *et al.* suggests that simple gene combinations could be used in these stem cells to achieve specific endocrine tissue differentiation.

References

1. Department of Molecular and Cellular Biology, Harvard University, [http://golgi.harvard.edu/]

2. Grapin-Botton A, Majithia AR, Melton DA: Key events of pancreas formation are triggered in gut endoderm by ectopic expression of pancreatic regulatory genes. *Genes Dev* 2001, 15: 444-454., [http://www.genesdev.org/]