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Transcription factors are often modular in nature, containing sequence-specific DNA-binding domains and transactivation domains. In an Advanced Online Publication in Nature Biotechnology Kwang-Hee Bae and colleagues at ToolGen Inc in South Korea, report the generation of "designer transcription factors" with specific binding activities (*Nature Biotechnology*, 18 February 2003, doi:10.1038/nbt796). A modified one-hybrid screen in yeast selected zinc-finger motifs with specific DNA-binding properties. The system was used to screen a library of over 2,000 factors that were derived from the Zif268 transcription factor and contained variant zinc-finger sequences isolated from the human genome; 56 zinc fingers with distinct DNA-binding specificities were isolated. Bae *et al.* shuffled the selected zinc-finger domains and tested them as transcription factors. They found that the 'natural' human zinc-finger domains function better than 'artificial' engineered zinc fingers. The designer factors could also regulate expression of a chosen endogenous genomic locus.

References

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