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Some Olympic visitors left the Sydney Games with more than thrilling memories. Official souvenirs now include a dab of athletes' genes in every item.

"It's a little bit science-fictional, but it's a great insurance policy against counterfeiters," says Chris Outwater, head of Los Angeles-based DNA Technologies.

An overseas affiliate of his company slipped a section of human genetic code taken from several unnamed Australian athletes into ink used to mark all official goods — everything from caps to socks — from the 2000 Games. It's a technology the company developed as a way to mark artwork or one-of-a-kind sports souvenirs.

Impressed by the results, Winter Olympics 2002 officials in Salt Lake City are considering using DNA strips for their souvenirs.

"We're basically using Mother Nature's incredible complexity to our advantage," Outwater says. He estimates that around 5% of all goods worldwide are counterfeits. To fight fakes, DNA, or deoxyribonucleic acid, the chemical our cells use to carry genes in a varied 3 billion-character pattern of molecules, offers a "complex, yet elegantly simple" system for providing coded markings on clothes and other goods, he says.

To pull off the feat, scientists first isolated a section of an athlete's DNA, taken from a cheek swab. Then, they replicated the genetic material using a procedure known as polymerase chain reaction (PCR), adding the sections into the ink.

In turn, the ink was applied to the products as part of their manufacturing process.

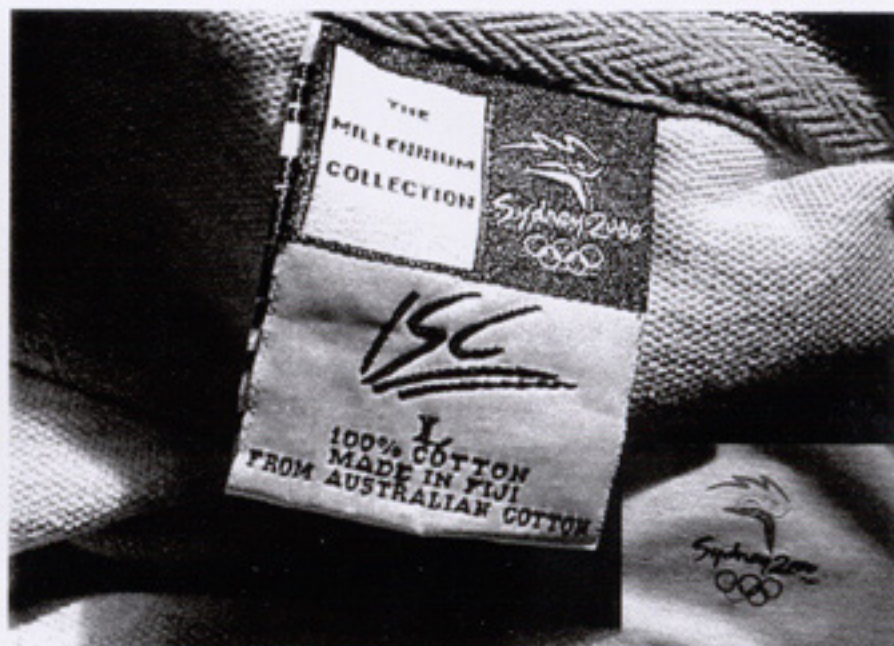
To spot-check a group of souvenirs, such as shirts, for authenticity, they chop

Dab of DNA helps keep counterfeiters at bay



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DNA Technology

"Complex, yet elegantly simple": DNA from an athlete was used in Olympic souvenir shirts like this one to prevent counterfeiting. The genetic material was mixed with ink used to mark officially licensed goods.

up the ink on one of the items at a store and look at its genetic material via PCR, an activity familiar to anyone who watches modern crime shows.

"It's as good as fingerprints, maybe even better," says Bert Weinstein, head of the biotechnology program at Lawrence Livermore (Calif.) National Lab.

Some pins contain the DNA of the athlete they celebrate, according to Australian Olympic officials, but most use just a small snippet of anonymous DNA.

More than 2,000 types of items, mostly apparel and keepsakes, worth more than half a billion dollars all told, were created for the Games.

The DNA technology provides a second safeguard against counterfeiters who manage to reproduce the ink, which is visible only under a special light.

Olympic officials conducted random tests of goods to ensure they were official items, Outwater says. And Australian officials reportedly stopped thousands of counterfeit souvenirs from being shipped into the country.

Such anti-counterfeiting measures have

been developed in recent years for a number of reasons. Companies seek to assure buyers that their purchases, from art to fine wine to premium crude oil, are the genuine article.

Up until now, the closest approach to using DNA as a marker was offered by an English company, Biocode Limited, which uses harmless versions of antibodies, features of the human immune system, to mark liquids in a somewhat similar scheme.

The company, which has a center in Bethlehem, Pa., started as a spin-off of Shell Oil Co.

DNA Technologies hopes to move more of its business into apparel, a market notorious for counterfeits.

Weinstein calls the clothes-marking scheme a "very unique" take on using genes, but points to one possible problem: "The real question is whether the DNA would remain intact after weeks or months of wear and washing."

People hoping to verify the origin of their souvenirs years after the Games should keep them away from sunlight and bleach, Weinstein says.