Volume 85 Issue 13 | p. 56 | Newscripts
Issue Date: March 26, 2007

Newscripts

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Sweatshop: perspiration products
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Pseudo Sweat

You've just stepped behind the lectern. Two hundred pairs of eyes are watching you fire up PowerPoint. It occurs to you that operating the laser pointer may require techie tendencies possessed only by individuals born after 1985, a demographic that regularly seems to conspire against you. Chances are, your hands are a tad sweaty.

Chances are, it does not occur to you this bodily fluid might be a hot commodity. **PERSPIRATION**may be glistening on your brow, but Newscripts would bet that its market potential is definitely not on your mind.

Not so for Michael Pickering. Lately he's been thinking volumes about eccrine sweat—the temperature-adjusting perspiration that flows primarily from your palms and feet, but to a lesser extent from glands all over your body. (These differ from the apocrine glands of your armpits that produce sweat with fatty acids subsequently munched on by bacteria, the metabolism of which makes one stinky.)

Pickering is the head of Pickering Laboratories, in Mountain View, Calif., who, with Canadian collaborators at Crime Science, in Fonthill, Ontario, released a perspiration mimic to the American public last month, a product called Swetcheck.

Now, Newscripts does not officially endorse sweat per se. In fact, we are of the firm opinion that the quantity of world sweat is quite high enough, thank you very much. Newscripts does, however, find the notion of pseudosweat entirely engrossing and is patently relieved to report that Swetcheck was not produced in an actual sweatshop.

It turns out that forensic scientists need a "reproducible supply of eccrine sweat," Pickering says, to ensure that the chemistry they are using to test for fingerprints on valuable evidence is actually working. In particular, forensic cops subject their evidence to reagents like ninhydrin that dye protein amines found in fingerprints pink—a way to detect less visible prints. But forensic folk like to run a control at the same time, namely one of their own fingerprints on a control surface. This ensures that the dye chemistry is working and that a null result on evidence is not just a result of faulty reagents or poor experimental technique, says Paul Couture of Crime Sciences. The problem is that you need sweaty fingers to make a print-and forensic scientists aren't immune to dry hands. Swetcheck is dispensed in single-use sterile swabs that forensic investigators can apply to their thumbs; competitor Armor Forensics produces an ink-pad version.

Since the product's launch in Canada late last year, a few hundred Swetchecks have been sold to Canadian police (yes, including the red-suited Mounties) at a couple of bucks a pop. Samples have also been sent to the U.S. Secret Service following February's American launch, but oddly, Newscripts has not yet succeeded in soliciting a comment from them.

It turns out that spy and forensic agencies are not alone in their pseudosweat needs. Textile manufacturers also use mimics to ensure their clothing dyes don't bleed when exposed to human perspiration, Pickering says. Credit card manufacturers use fake sweat to ensure that magnetic strips are not rubbed off or corroded by users' sweat. Currently, phosphate buffers with a touch of salt are often used as a sweat mimic in these applications—a cocktail that is ad hoc at best, says Pickering.

He carefully compiled a list of perspiration components during a literature search that left him "completely blown away by the complexity of sweat." It seems there are over 400 proteins present in perspiration, including antimicrobial peptides like dermicidin. There are metabolites like lactic acid and urea. There's even zinc. Although sweat pH ranges from 3 to 5, Pickering chose pH 4.5 for Swetcheck. The sweat mimic also contains eight minerals, including copper, potassium, and magnesium; three metabolites, including urea; and 20 amino acids, in proportions that reflect sweat studies. Who would have guessed that L-serine is the top sweat constituent?