

Soapy taste of coriander linked to genetic variants

Dislike of herb traced to genes encoding odour and taste receptors.

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12 September 2012

Julia Child loathed the stuff, one in six *Nature* staff (informally surveyed) says it tastes of soap, and a popular website collects haiku poems denouncing it. Now, researchers are beginning to identify genetic variants behind the mixed reception for the herb *Coriandrum sativum*, which North American cooks know as cilantro, and their British counterparts call coriander.

A genetic survey of nearly 30,000 people posted to the preprint server arXiv.org this week has identified two genetic variants linked to perception of coriander, the most common of which is in a gene involved in sensing smells¹. Two unpublished studies also link several other variants in genes involved in taste and smell to the preference^{2,3}.

“O soapy flavour / Why pollutest thou my food? / Thou me makest retch,” reads one of the hundreds of haikus posted to the website IHateCilantro.com. There is clearly sympathy for this stance — 21% of east Asians, 17% of people of European ancestry and 14% of people of African descent say they dislike the stuff, according to a paper published this year in the journal *Flavour*⁴. By contrast, 3–7% of south Asians, Latin Americans and Middle Eastern subjects disapproved of the herb, which is more common in their native cuisines.

Heritable hatred

Dislike of coriander has long been thought to be a partly inherited trait and not just an artefact of cultural practices and exposure to the herb. Charles Wysocki, a behavioural neuroscientist at the Monell Chemical Senses Center in Philadelphia, Pennsylvania, says that surveys of hundreds of twins he conducted beginning in the early 2000s at the annual Twins Days festival in Twinsburg, Ohio, suggests that coriander preference is influenced by genes. He found that about 80% of identical twins shared the same preference for the herb. But fraternal twins (who share about half their genome) agreed only about half the time. “Strong evidence suggests there’s a heritable component to the reactions that people have to cilantro, whether you’re a hater or a lover,” he says.

In hopes of identifying the genetic basis for these traits, researchers led by Nicholas Eriksson at the consumer genetics firm 23andMe, based in Mountain View, California, asked customers whether coriander tasted like soap and whether or not they liked the herb. The researchers identified two common genetic variants linked to people’s “soap” perceptions. A follow-up study in a separate sub-set of customers confirmed the associations.

The strongest-linked variant lies within a cluster of olfactory-receptor genes, which influence sense of smell. One of those genes, *OR6A2*, encodes a receptor that is highly sensitive to aldehyde chemicals, which contribute to the flavour of coriander. This makes *OR6A2* “a compelling candidate gene for the detection of the odours that give it its divisive flavour”, the researchers write.

Eriksson, who despised coriander when he first tasted the herb but now grows it in his garden, says that nearly half of Europeans have two copies of the ‘soapy’ variant, and of those, 15.3% said coriander tasted of soap. For comparison, 13% of Europeans had no copies of this variant, and in this group, only 11.5% of them reported the soapy taste.

Meanwhile, in 2011, Lilli Mauer, a nutrition scientist at the University of Toronto in Canada, identified variants in a different olfactory receptor gene and a bitter taste receptor gene linked to coriander preference among more than 500 people of European descent². And in a paper soon to be published in the journal *Chemical Senses*³, Wysocki and his team found an association between coriander taste and several other genes, including a bitter-taste receptor. He says that the differences between the variants identified in the three studies could be a result of how people measure coriander preference and that more objective measures would be useful.

But coriander-haters — including the nearly 4,000 registered members of IHateCilantro.com — should not be in any rush to have their



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Some people love fresh coriander - but a vocal minority hate the taste.

genomes analysed. Eriksson and his team calculate that less than 10% of coriander preference is due to common genetic variants. “It is possible that the heritability of cilantro preference is just rather low,” they say.

Setting aside hypothetical hopes of a biological fix, those who hate coriander have two options: avoid or adulterate. Julia Child took the former option: in 2002, she told the interviewer Larry King that she never ordered dishes with coriander: “I would pick it out if I saw it and throw it on the floor.” But the renowned food science writer Harold McGee suggested a milder solution in a 2010 [column in the *New York Times*](#). Inspired by a study⁵ suggesting that crushing coriander sped up the rate at which plant enzymes break down aldehyde molecules — perhaps removing those to which coriander-haters are most sensitive — he recommends grinding up these ingredients for a mild, pesto-like sauce.

1/2 cup [c. 75g] toasted almonds

3 cups coriander leaves and tender stems (about 2 bunches)

1 or 2 garlic cloves

1/2 cup [120ml] extra virgin olive oil

2/3 [c. 70g] cup grated aged sheep’s milk cheese like Nisa, Serpa or pecorino-Toscana

Serve right away with pasta, grilled meats, vegetables or soups, or freeze.

Nature | doi:10.1038/nature.2012.11398

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