Lab tests show that some traditional soup broths have antimalarial properties

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Some traditional vegetable and meat soup broths can interrupt the life cycle of the most deadly of the malarial parasites, Plasmodium falciparum, reveal the results of lab tests, in what is thought to be the first study of its kind, published in the *Archives of Disease in Childhood*.

Given that malaria poses a risk to half the world's population, and that resistance to the drugs used to treat it continues to emerge, there may be other natural resources worth tapping to fight this scourge, say the researchers.

In light of the development of the antimalarial artemesin, which originates from qinghao, used in traditional Chinese herbal medicine to treat fever, the researchers wanted to see if other 'natural' remedies might also have antimalarial properties.

They asked the pupils at one primary school in London to bring in samples of home-made soup broths, the recipes for which had been passed down through the generations for the treatment of fever.

The children came from diverse ethnic backgrounds, from across Europe, North Africa, and the Middle East.

Of the 60 clear broths brought in, some were too dense to be filtered, and some contained too much oil, leaving 56 available for testing.

Several different parasites from the Plasmodium family are responsible for causing malaria when transmitted through the bite of an infected mosquito, but P falciparum is the deadliest.

Filtered extracts of each of the 56 broths were incubated for 72 hours with different cultures of P falciparum to see if any of the broths might be able to stop the growth of sexually immature parasites that cause disease, as well as blocking sexual maturation, the stage at which the parasite can infect the mosquito.

Five of the broths were able to curb growth of the sexually immature parasite by more than 50%. In two of these, the inhibitory activity was comparable with that of a leading antimalarial drug, dihydroartemisinin.

Four other broths were more than 50% effective at blocking sexual maturation, so potentially stopping malarial transmission.

The recipes for each of the broths, which were vegetarian, chicken, or beef based, varied, with no particular ingredient common to those with the strongest antimalarial activity.

The active ingredients in the broths studied are yet to be identified and tested in clinical trials, caution the researchers.

And they go on to say: "The utility of any broth found to have antimalarial activity will, of course, depend significantly on standardisation of soup preparation and ultimately identification of the

active source ingredient, its fractionation and, towards its progression, detailed toxicology with first human cells and later preclinical trials."

But they add: "This journey, mirroring that of artemisinin from the Qinghao herb, may as yet reveal another source of potent anti-infective treatment."

More information: Screen of traditional soup broths with reported antipyretic activity towards the discovery of potential antimalarials, *Archives of Disease in Childhood* (2019). DOI: 10.1136/archdischild-2019-317590