

HEALTH SCIENCE IN THE NEWS

A FOCUS ON MALARIA

Chloroquine Is Born Again

Chloroquine - which is far cheaper than more modern malaria drugs - was hugely successful in combating the disease when launched in the 1950s - it works by blocking the way the parasite breaks down human haemoglobin contained in red blood cells. But the malaria parasite gradually became resistant to Chloroquine. The resistant forms of the parasite neutralise the drug by developing a mechanism that drains chloroquine away from the key area, preventing it from reaching the necessary concentration.

Researchers have found combining the chloroquine with another preparation, Primaquine, seems to restore its effect. Combination of chloroquine with chlorpheniramine proved effective in treating children and pregnant women with chloroquine-resistant infections.

<http://www.who.int/tdr/research/finalreps/no44.htm>

HIV Drugs Block Malaria In Tests

The powerful drugs used to treat [HIV](#) have been shown to also be effective in treating malaria. According to scientists at the Queensland Institute of Medical Research, Australia, antiretroviral drugs stopped the parasite that causes malaria from growing. The HIV drugs also worked on parasites that had developed resistance to common malaria drugs as demonstrated in laboratory tests. The findings are important in Africa where people are likely to be infected with both HIV and malaria.

As demonstrated by other studies, six of the five protease inhibitors used to treat HIV were also found to kill *Plasmodium falciparum*. Dr Savarino from the Catholic University in Rome has patented potential drug treatment combinations. This finding also demonstrates that there potential drug targets in the parasite that have not yet been exploited.

[\(See Story from BBC News\)](#) (6/27/05)

"Perfume" to Lure Mosquitoes and Control Malaria

Female malaria mosquitoes "smell" with specialized receptors in their antennae and are drawn to particular human odors that say "dinner." While the mosquito feeds on blood that is needed for its egg production, parasites from the mosquito enter and infect the hu-

man. When an infected person is bitten again, the parasite can be transmitted to an uninfected mosquito and spread further. To stop the transmission a perfume is being developed by an international team of scientists at Yale University to redirect mosquitoes with odor cues. The project is one of the 43 "groundbreaking" research projects to improve health in developing countries. The aim is to reduce the population of malaria transmitting mosquitoes by identifying effective "perfumes" that act as attractants to traps or as mosquito repellents. The institutions involved include the Ifakara Health Research and Development Centre in Tanzania and the Medical Research Council Laboratories in Gambia (Africa).

[\(See Story from EurekAlert!\)](#) (7/1/05)

<http://www.yale.edu>

Fungus "May Help Fight Malaria

A common fungus could be the newest weapon in the fight against [malaria](#). A UK team found that it can prove fatal to mosquitoes which come into contact with the fungus when it is sprayed onto surfaces. A type of fungus from the species *Beauveria bassiana* was sprayed onto cage mesh. When a mosquito comes in contact with the spores, the fungus germinates, penetrates the mosquito and grows within it, eventually killing it. The study in *Science* showed over 90% of mosquitoes were killed within 14 days of being infected. In laboratory tests, fungal infection reduced malaria transmission in the laboratory by 98%.

[\(See Story from BBC News\)](#) (6/10/05)

The cost of malaria

Malaria costs Africa USD12 billion a year in monetary terms and between 350 and 500 million cases and an estimated 1.5 million deaths in human lives annually. In addition, it is holding back economic and social development in Africa by slowing down economic growth, discouraging investment (local and foreign) and tourism, discouraging the development of internal trade and adversely affects people's choice of economic activities, while depleting human resources.

DID YOU KNOW!

CHARACTERISTICS AND OWNERS OF HIV DRUGS?

Nucleoside Reverse Transcriptase Inhibitors (NRTIs)			
Brand Name	Generic Name	Manufacturer Name	Approval Date
Combivir	lamivudine and zidovudine	GlaxoSmithKline	27.sept.97
Emtriva	FTC, emtricitabine	Gilead Sciences	02.juil.03
Epivir	lamivudine, 3TC	GlaxoSmithKline	17.nov.95
Epzicom	abacavir/ lamivudine	GlaxoSmithKline	02-Aug-04
Hivid	zalcitabine, ddC, dideoxycytidine	Hoffmann-La Roche	19.juin.92
Retrovir	zidovudine, AZT, azidothymidine, ZDV	GlaxoSmithKline	19.mars.87
Trizivir	abacavir, zidovudine, and lamivudine	GlaxoSmithKline	14.nov.00
Truvada	tenofovir disoproxil/emtricitabine	Gilead Sciences, Inc.	02-Aug-04
Videx EC	enteric coated didanosine	Bristol Myers-Squibb	31.oct.00
Videx	didanosine, ddl, dideoxyinosine	Bristol Myers-Squibb	09.oct.91
(generic version)	Didanosine (ddl) Delayed Release capsules	Barr Laboratories, Inc.	03-Dec-04
Viread	tenofovir disoproxil fumarate	Gilead	26.oct.01
Zerit	stavudine, d4T	Bristol Myers-Squibb	24.juin.94
Ziagen	abacavir	GlaxoSmithKline	17-Dec-98
Nonnucleoside Reverse Transcriptase Inhibitors (NNRTIs)			
Brand Name	Generic Name	Manufacturer Name	Approval Date
Rescriptor	delavirdine, DLV	Pfizer	4-Apr-97
Sustiva	efavirenz	Bristol Myers-Squibb	17.sept.98
Viramune	nevirapine, BI-RG-587	Boehringer Ingelheim	21.juin.96
Protease Inhibitors (PIs)			
Brand Name	Generic Name	Manufacturer Name	Approval Date
Agenerase	amprenavir	GlaxoSmithKline	15-Apr-99
Aptivus	tipranavir	Boehringer Ingelheim	22.juin.05
Crixivan	indinavir, IDV, MK-639	Merck	13.mars.96
Fortovase	saquinavir	Hoffmann-La Roche	07.nov.97
Invirase	saquinavir mesylate, SQV	Hoffmann-La Roche	6-Dec-95
Kaletra	lopinavir and ritonavir	Abbott Laboratories	15.sept.00
Lexiva	Fosamprenavir Calcium	GlaxoSmithKline	20.oct.03
Norvir	ritonavir, ABT-538	Abbott Laboratories	01.mars.96
Reyataz	atazanavir sulfate	Bristol-Myers Squibb	20.juin.03
Viracept	nelfinavir mesylate, NFV	Agouron Pharmaceuticals	14.mars.97
Fusion Inhibitors			
Brand Name	Generic Name	Manufacturer Name	Approval Date
Fuzeon	enfuvirtide, T-20	Hoffmann-La Roche & Trimeris	13.mars.03

Source: US FDA