

(54) Title of the invention : USE OF IONIC TO NON-IONIC EXTRACTS OF BARK AND LEAVE OF AZADIRACHTA INDICA (NEEM) AT DOSE RANGE 300 MG/ KG TO 1000 MG/ KG FOR RESISTANCE REVERSAL TO ACHIEVE EFFICACY OF QUININE (EQ.) AT DOSE 20 MG/ KG IN CHLOROQUINE RESISTANT PLASMODIUM STRAIN OF DISEASE MALARIA.

<p>(51) International classification :A61K0031470600, A61K0036580000, A61K0031490000, A61K0031470000, A61K0009480000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : <b>1)Jai Kumar Mishra</b> Address of Applicant :45 Rosewood Apt. Pocket A, Dwarka Sec 13A, New Delhi 110078 -----</p> <p><b>2)Dr. Kumud Upadhyay</b> Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : <b>1)Jai Kumar Mishra</b> Address of Applicant :Research Scholar, Dept. of Pharmacy, Uttarakhand Technical University. Dehradun, Uttarakhand, India, 248001 -----</p> <p><b>2)Dr. Kumud Upadhyay</b> Address of Applicant :Associate Professor, Department of Pharmacy, Kumau University, Uttarakhand, Inida -----</p> <p><b>3)Dr. Sharad Visht</b> Address of Applicant :Assistant Professor, DIT University, Dehradun, Uttarakhand, India -----</p> <p><b>4)Dr. Ramandeep Singh,</b> Address of Applicant :Professor, Department of Pharmacology, Himachal Institute of Pharmacy, Paonta sahib (Sirmour), H.P, India -----</p> <p><b>5)Ms Anita Kumari,</b> Address of Applicant :M/S LFE, Rosewood apt. Pocket A, Dwarka 13, Delhi, India, 110078 -----</p> <p><b>6)Dr. Hareesh Dara</b> Address of Applicant :Professor Sree College of Pharmacy, Kakatiya University. Warangal Andhra Pradesh -----</p> <p><b>7)Ms Sunita Singh</b> Address of Applicant :Assistant Professor, BBD University, Lucknow, UP , India -----</p>
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(57) Abstract :

Advent of resistance to various antimalarial drugs by plasmodium made malaria more fatal & life-threatening disease in the world. Current need is to invest more effort and interest in research for antimalarials from medicinal plants. Plasmodium yoelii nigeriensis (PYn) is multi drug resistance malaria parasite known for resistance to chloroquine, quinine, quinidine, amodiaquine, halofantrine, mepacrine and mefloquine. The plasmodium yoelii produces hundred percent infection in animals. Innovators in this patent understand the behavior of chloroquine-resistant plasmodium PYn with chloroquine, bark and leaves extracts of plant Azadirachta indica for their resistance reversal. Chloroquine is a first line treatment drugs for malaria all over the world. Wherever, 3-4 times chloroquine doses are not able to produce sufficient antimalarial effect in resistant PYn. As resistance is a prevalent in many parts of the world, reported by hundreds of scientist world wide in malaria. Most of the pure plant extracts are also not able to produce minimal therapeutic response when given alone. Whereas, plant extract shows a better effect when given with minimal dose chloroquine than alone. Neem (Azadirachta indica) bark and leaves ionic to non-ionic extracts (hydroalcoholic to ethanolic extract) dose ranges 300 mg/ to 1000 mg/ kg are able to reverse the chloroquine efficacy as antimalarial when given in combination with chloroquine 5 mg/ kg to 20 mg/ kg. Azadirachta indica bark extract Ionic to Non-ionic extracts (hydroalcoholic and ethanolic) extract at higher dosage 1000 mg/ kg produce efficacy then 300 mg/ kg dose group. Overall effect ranges between 300 mg/ kg to 1000 mg/ kg. Our innovation of multi-drug resistant strain of plasmodium supported here in the research to using antimalarial plant extracts during regular malaria treatment to achieve better antimalarial results in the clinical manifestations of malaria and to avoid development of resistance against the used drugs. Also referring standardized plant extract(s) in combination as oral dosage also with prophylactic (travelers) malaria & malaria treatment or food-aid for malaria will. Our innovation pave a path for inclusion of herbal extracts or herbs as side treatment or resistance-breaker food for malaria.

No. of Pages : 24 No. of Claims : 7