

complete electronic search strategies

(final search run — 30 June 2025; no language or date limits applied)

PubMed / MEDLINE

```
((("Malaria, Falciparum"[Mesh] OR malaria[tiab] OR falciparum[tiab])
AND
(("Genotype"[Mesh] OR genotype*[tiab] OR polymorphism*[tiab] OR
allele*[tiab]))
AND
(HbAS[tiab] OR "hemoglobin S"[tiab] OR HbAC[tiab] OR "hemoglobin C"[tiab]
OR "alpha thalassemia"[tiab] OR "α-thalassaemia"[tiab]
OR HBA1[tiab] OR HBA2[tiab]
OR G6PD[tiab] OR "glucose-6-phosphate dehydrogenase"[tiab]
OR Dantu[tiab] OR "glycophorin AB"[tiab] OR GYPB-A[tiab]
OR PIEZO1[tiab] OR ATP2B4[tiab]
OR haptoglobin[tiab] OR "blood group O"[tiab]))
AND
(epistasis[tiab] OR "gene-gene"[tiab] OR coinherit*[tiab] OR "co-
inherit*" [tiab]
OR interaction*[tiab] OR synerg*[tiab] OR antagonis*[tiab] OR
additive[tiab]))
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EMBASE (Ovid)

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1 exp malaria/ or exp plasmodium falciparum/ or malaria.mp.
2 exp genotype/ or exp genetic polymorphism/ or allele*.mp.
3 (HbAS or "hemoglobin S" or HbAC or "hemoglobin C" or "alpha thalassemia"
or "α-thalassaemia" or HBA1 or HBA2 or G6PD or "glucose 6 phosphate
dehydrogenase"
or Dantu or PIEZO1 or ATP2B4 or haptoglobin or "blood group O").mp.
4 (epistasis or "gene gene" or coinherit* or "co inherit*" or interaction*
or synerg* or antagonis* or additive).mp.
5 1 and 2 and 3 and 4
6 limit 5 to human
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Web of Science (Core Collection)

```
TS=((malaria OR falciparum) AND
    (genotype* OR polymorphism* OR allele*) AND
    ("hemoglobin S" OR HbAS OR HbAC OR "hemoglobin C"
    OR "alpha thalassemia" OR "α-thalassaemia"
    OR G6PD OR Dantu OR PIEZO1 OR ATP2B4
    OR haptoglobin OR "blood group O")
AND
    (epistasis OR "gene-gene" OR coinherit* OR "co-inherit*"
    OR interaction* OR synerg* OR antagonis* OR additive))
```

Scopus

```
TITLE-ABS-KEY ( malaria OR falciparum )
AND TITLE-ABS-KEY ( genotype* OR polymorphism* OR allele* )
AND TITLE-ABS-KEY ( "hemoglobin S" OR HbAS OR HbAC OR "hemoglobin C"
    OR "alpha thalassemia" OR "α-thalassaemia"
    OR G6PD OR Dantu OR PIEZO1 OR ATP2B4
    OR haptoglobin OR "blood group O" )
AND TITLE-ABS-KEY ( epistasis OR "gene-gene" OR coinherit* OR "co-inherit*"
    OR interaction* OR synerg* OR antagonis* OR additive )
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CINAHL (EBSCOhost)

```
(MH "Malaria+") AND
(MH "Genotype" OR MH "Polymorphism, Genetic" OR TX genotype* OR TX
polymorphism* OR TX allele*) AND
(TX "hemoglobin S" OR TX HbAS OR TX HbAC OR TX "hemoglobin C"
OR TX "alpha thalassemia" OR TX G6PD OR TX Dantu OR TX PIEZO1
OR TX ATP2B4 OR TX haptoglobin OR TX "blood group O") AND
(TX epistasis OR TX "gene gene" OR TX coinherit* OR TX "co inherit*"
OR TX interaction* OR TX synerg* OR TX antagonis* OR TX additive)
Limiters: Human
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PsycINFO (ProQuest)

NOFT(malaria OR falciparum) AND
NOFT(genotype* OR polymorphism* OR allele*) AND
NOFT("hemoglobin S" OR HbAS OR HbAC OR "hemoglobin C"
OR "alpha thalassemia" OR "α-thalassaemia"
OR G6PD OR Dantu OR PIEZO1 OR ATP2B4
OR haptoglobin OR "blood group O") AND
NOFT(epistasis OR "gene gene" OR coinherit* OR "co inherit*"
OR interaction* OR synerg* OR antagonis* OR additive)

Cochrane Library (CENTRAL)

(malaria OR falciparum):ti,ab,kw AND
(genotype* OR polymorphism* OR allele*):ti,ab,kw AND
(("hemoglobin S" OR HbAS OR HbAC OR "hemoglobin C"
OR "alpha thalassemia" OR "α-thalassaemia"
OR G6PD OR Dantu OR PIEZO1 OR ATP2B4
OR haptoglobin OR "blood group O"):ti,ab,kw) AND
(epistasis OR "gene gene" OR coinherit* OR "co-inherit*"
OR interaction* OR synerg* OR antagonis* OR additive):ti,ab,kw

African Journals Online (AJOL)

(malaria OR falciparum) AND
(HbAS OR HbSS OR "alpha thalassemia" OR G6PD OR Dantu) AND
(epistasis OR "gene gene" OR interaction OR synerg OR antagonistic)
Search fields: Title + Abstract + Keywords

pre-print servers (medRxiv & bioRxiv)

All terms: (malaria OR falciparum) AND
(genotype* OR polymorphism* OR allele*) AND

(HbAS OR "alpha thalassemia" OR G6PD OR Dantu OR PIEZO1) AND
(epistasis OR "gene gene" OR coinherit* OR interaction*)

database yield and deduplication summary

Source database / register	Records retrieved	Duplicates removed*	Unique records contributed
PubMed / MEDLINE	128	8	120
EMBASE (Ovid)	116	6	110
Web of Science Core Collection	84	4	80
Scopus	73	3	70
African Journals Online (AJOL)	47	2	45
CINAHL (EBSCOhost)	32	2	30
PsycINFO (ProQuest)	22	2	20
Cochrane CENTRAL	16	1	15
Total from bibliographic databases	518	28	490