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Fig. 1 - Chromsomome size polymorphisms P. berghei

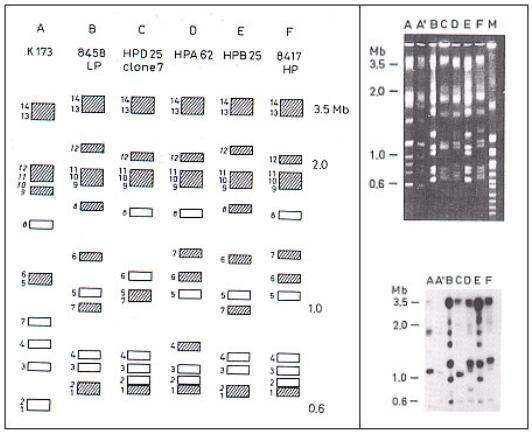

Figure 1: Chromosome size polymorphisms (karyotypes) of different clones of the ANKA and K173 strain of *P. berghei*. The karyotypes have been established by separation of chromosomes by pulsed field gel electrophoresis and hybridization of chromosome specific probes to the separated chromosomes (see table 2). Clone 8417HP of the ANKA strain is used as the reference clone for numbering of the 14 chromosomes. Note the extensive size differences in chromosome 6 and 7. Size differences are mainly due to variation in the number of 2.3 kb subtelomeric repeats (see also Fig. 5).

Ethidium bromide staining of FIGE separated chromosomes (93.5 h 3.5 V cm-1, linearly increasing pulse time from 60 to 527 s and forward/backward ratio of 3/1). (A) K173, clone 1; (A') K173, clone 2; (B) clone 8458LP; (C) HPD25, clone 7; (D) HPA62; (E) HPB25; (F) clone 8417HP; (M) S. cerevisiae chromosomes as molecular weight markers.

Southern blot of the same gel hybridised to the 2.3-kb probe.

Schematic representation of the karyotypes. The 8417HP clone was taken as the reference karyotype and the chromosomes (drawn as boxes) were numbered consecutively from smallest to largest. Shadowed boxes indicate chromosomes positive to the 2.3-kb probe.

From: Ponzi et al. (1990). Mol. Biochem. Parastol. 41, 73-82.

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Fig. 2 - Size polymorphim chromosomes 5 and 7

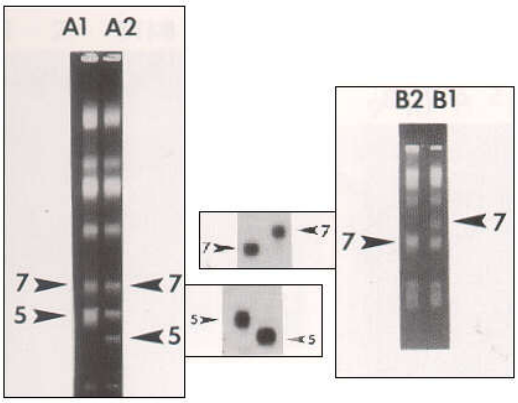

Figure 2: Size polymorphisms in chromosome 5 and 7 in different clones of the ANKA strain as shown by ethidium-bromide staining of separated chromosomes and by hybridization with chromosome specific probes.
Karyotype patterns of two populations of clone 8417 of *Plasmodium berghei* just before (A1, B1) and just after (A2, B2) the loss of gametocyte production. Hybridization with chromosome-specific probes shows that in population A non-producer mutants with a smaller chromosome 5 replaced the high-producer parasites of clone 8417. In population B non-producer mutants with a smaller chromosome 7 became predominant.
From: Janse et al. (1992). Exp. Parasitol. 74,1-10.

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Fig. 3 - Size and number of rodent parasites chromosomes

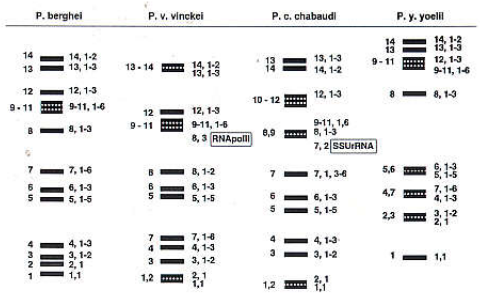
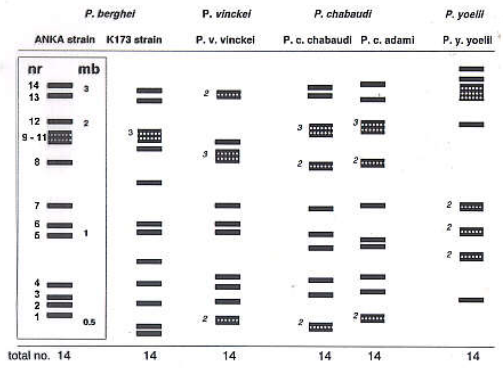


Figure 3: Size and numbering of the 14 chromosomes of *P. berghei* and the other three murine malaria parasites.
A. Schematic representation of the karyotypes and the location and linkage of probes on different chromosomes of four species of *Plasmodium*. Chromosomes were separated by pulsed field gel electrophoresis (FIGE of CHEF conditions). The number of chromosomes in groups of co-migrating chromosomes in pulsed field gels was determined as described in Fig. B. The karyotype of clone 8417 of the ANKA strain of *P. berghei* (see Fig.B) is used as the reference karyotype to number the chromosomes (see left hand side of the karyotypes). The chromosomal location of the probes was established by hybridization of radio-labelled probes to the chromosomes (see right-hand side of the karyotype for the numbers of the probes). The three genes which show a deviant location compared to the conserved location and linkage of most genes are boxed.



B. Schematic representation of the karyotypes and the total number of chromosomes of four species of *Plasmodium*. The total number of chromosomes have been established by separation of chromosomes by pulsed field gel electrophoresis (both FIGE and CHEF conditions). In each species several of the 14 chromosomes have the same size and co-migrate as a group in pulsed field gels. The exact number of the chromosomes in all those groups (see the number at the left hand side of the karyotypes) was established by counting the number of telomeric fragments after digestion of the chromosomes by ApaI .
From: Janse et al. (1994). Mol. Biochem. Parasitol. 68, 285-96.

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Fig. 4 - Separation of chromosomes FIGE-CHEF

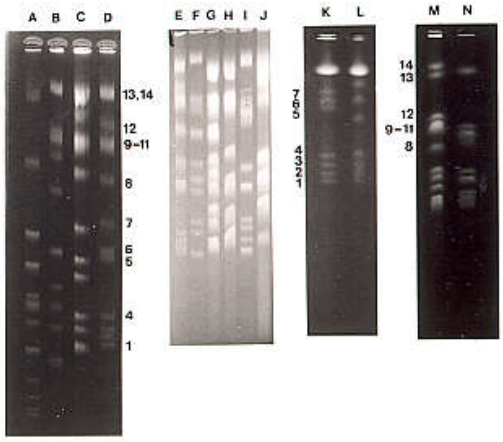

Figure 4: Chromosomes separated by pulsed field gel electrophoresis (FIGE and CHEF) of *P. berghei* and the other three murine malaria parasites. Chromosomes are visualized by ethidium bromide staining of the gels. We use different electrophoresis conditions to optimally separate the different chromosomes.
FIGE conditions were used to separate the chromosomes in the complete size range from 0.5-3.5Mb (lanes a-j). Different CHEF conditions (lanes k-n) were used to separate chromosomes which co-migrate in groups under FIGE conditions. Lanes A-D: S. cerevisiae (A), *P. berghei*K173 (B), *P. berghei* ANKA (C,D). (FIGE: 100h, 3.5 V cm-1, pulse time from 30-550 s). Lanes E-J: *P. berghei* ANKA (E), *P. c. chabaudi* (F,G), *P.v. vinckei* (H,I), *P.y. yoelii* (J). (FIGE: 90h, 3.5 V cm-1, pulse time from 60-500 s). Lanes K,L: *P. berghei* ANKA (CHEF: 24h, 80-120s pulse time; 24h, 130-180 pulse time; 24h, 180-240 pulse time; 4.5 V cm-1). Lanes M,N: *P. berghei* ANKA (M), *P.v. vinckei* (N). (CHEF: 60h, 500-700s pulse time; 25h, 300-500s pulse time; 3.5 V cm-1). From: Janse et al. (1994). Mol. Biochem. Parasitol. 68, 285-96.

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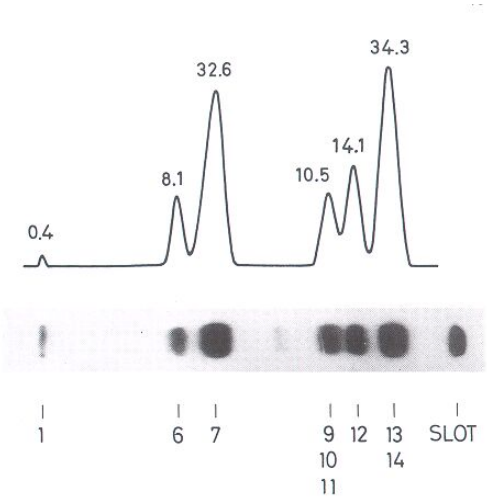
Fig. 5 - 2.3kb repeats in chromosomes P. berghei



Densiometric measurement of 2.3-kb hybridization intensity to chromosomes of 8417HP. FIGE-separated chromosomes from 8417HP which are positive to 2.3-kb probe are numbered and area percentages to the peaks are indicated.
From: Ponzi et al. (1990). Mol. Biochem. Parasitol. 41, 73-82.