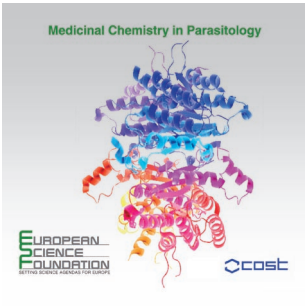
## COVER PICTURE



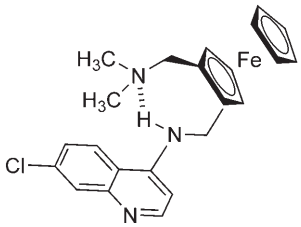

**The cover picture shows** the structure of the *Leishmania major* pteridine reductase, which is part of the folate biosynthesis pathway in this parasite. It is a parasite-specific co-target for the treatment of leishmaniasis. For details on other specific targets for the treatment of parasitic diseases, please refer to the articles in this issue that discuss research results pertinent to the *Medicinal Chemistry in Parasitology* meeting held last year in Modena, Italy under the COST action B22, which is focused on target identification and drug development for parasitic diseases; these articles are marked with the COST logo.

## NEWS



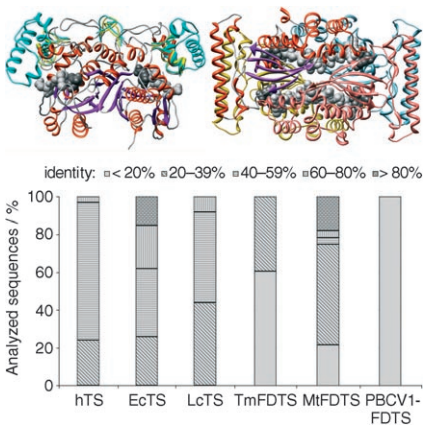
## MINIREVIEWS






**A convenient approach** to antimalarial drug discovery is the use of the organic scaffold of a known antimalarial drug and an organometallic moiety to alter its unwanted properties and/or to optimize its initial effects. This minireview focuses mainly on the discovery of ferroquine, which has emerged from a collaborative French discovery project, and efforts to understand its mechanism of action and resistance.






**Thymidylate synthases from pathogenic organisms**: Sequence analysis and knowledge-based grouping have provided a step forward in the identification of potential drug target regions in thymidylate synthases. This provides a unique approach toward blocking the growth of pathogenic organisms.

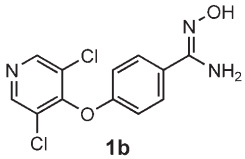
## CONFERENCE REPORTS



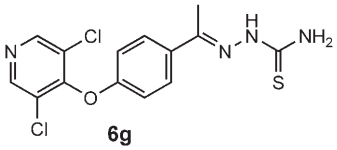
## COMMUNICATIONS





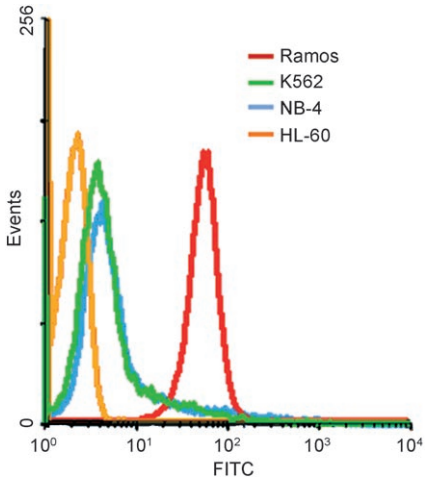

**1b**




**6g**

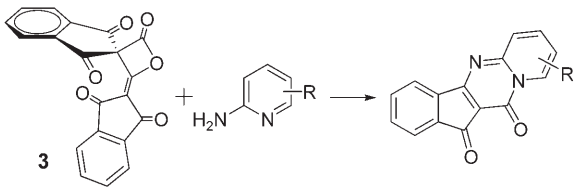
**Toxicological evaluations** were performed on two novel *Plasmodium falciparum* dihydrofolate reductase inhibitors and other known antimalarial drugs. Cytotoxicity tests were performed on Vero and MCF-7 cells and apoptotic and/or proliferative markers p21 and p53 and A, B1, D1, and D2 cyclines. The results are discussed and show that this molecule can be considered an interesting new candidate for further development.






**Photodynamic therapy for tumors**. This paper describes the application of a molecular construct of a photosensitizer and an aptamer for phototherapeutically targeting tumor cells. Coupled with the advantages of the cell-SELEX in generating multiple effective aptamers for diseased cell recognition, we will be able to develop highly efficient photosensitizer-based therapeutic reagents for clinical applications.



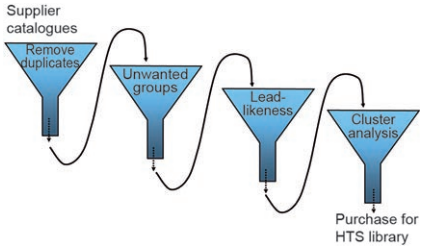



**3**

**Indanedione ketene dimer 3**, obtained in quantitative yield from the thermal decomposition of the phenyliodonium ylide of 2-hydroxy-1,4-naphthoquinone, reacts readily with 2-aminopyridines and 2-aminopyrimidines to afford the title compounds. They represent a new class of cell-permeable inhibitors for receptor tyrosine kinases implicated in angiogenesis and cancer cell proliferation.

## FULL PAPERS

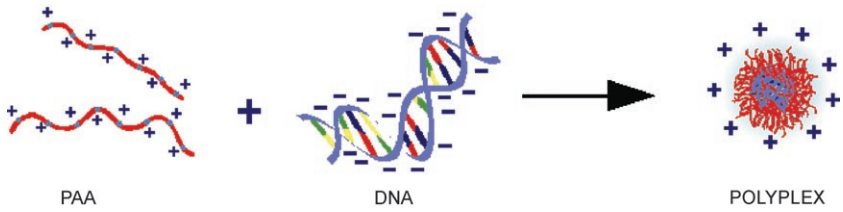





**Drug discovery on a low budget**: To enable a drug discovery operation for neglected diseases, a small but diverse high-throughput library was assembled. The selected compounds span a broad range of lead-like space, show a high degree of structural integrity and purity, and demonstrate appropriate solubility for the purposes of biochemical screening.

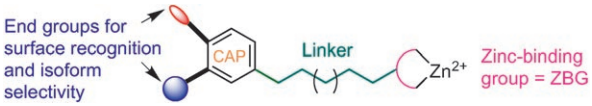
  




**Developing gene delivery vectors**. A novel class of poly(amido amine)s with pendant quaternary nicotinamide groups were synthesized and evaluated as gene delivery vectors. The quaternary nicotinamide groups in the polymer promote the formation of small and stable nanoparticles with DNA by both electrostatic and intercalate interactions and lead to increased transfection efficiencies.






**Isoform selectivity**: structurally unique HDAC inhibitors are equipped with an amino acid residue that serves as a potential isoform-differentiating, surface-recognition element. The surface-recognition group is connected through the usual carbon linker to either a hydroxamate or a mercaptoacetamide group that chelates the catalytic site zinc ion.

Supporting information on the WWW (see article for access details).

A video clip is available as Supporting Information on the WWW (see article for access details).

* Author to whom correspondence should be addressed.

Participant at the Medicinal Chemistry in Parasitology weeting, February 2007.

## BOOKS



## SERVICE



**All the Tables of Contents may be found on the WWW under: http://www.chemmedchem.org**

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