The CSRA Chemist

Savannah River Section
of the

American Chemical Society

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Ballot Inside!!!

Professional Society Meeting
October 19 -- Bobby's B-Que -- Dr. Chad Stephens,

The American Chemical Society Savannah River Section will hold a dinner meeting at Bobby's Bar-B-Q (1897 Jefferson Davis Highway), Wednesday, October 19, 6:30 pm (Social), 7:00 pm (Dinner), 7:45 pm (Speaker). The guest speaker, Dr. Chad Stephens, is the new chemistry professor at Augusta State University. He will present a talk on "DNA Minor-Groove Binders: Dicationic Compounds as Potential Antimicrobial Agents". He will discuss how structurally modified analogues of furamidine have been synthesized and assayed for antimicrobial activity against a variety of diseases. ACS members, nonmembers, and guests are invited to attend. Please contact Renee McCabe, (706) 736-0479, for reservations. Reservations are due by 12:00 noon, Friday, October 14. Buffet dinner includes barbecued pork, chicken, hash, rice, side dishes, dessert, and iced tea. ($10 per person).

LETS GET A CROWD - INVITE YOUR CO-WORKERS - COME OUT AND SIPPORT THE SECTION

DNA Minor-Groove Binders: Dicationic Compounds as Potential Antimicrobial Agents

Chad E. Stephens

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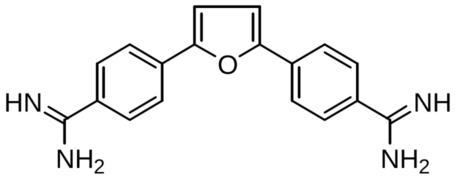
Dicationic minor-groove binders, such as pentamidine, are active against a wide variety of microorganisms, including *Pneumocystis carinii*, *Cryptosporidium parvum*, *Giardia lamblia*, *Mycobacterium tuberculosis*, *Trypanosoma* sp., and *Plasmodium* sp. Although the precise mode of action of these types of compounds is, in most cases, not well defined, it is generally regarded that they bind to the DNA minor-groove and subsequently inhibit one or more DNA-dependent enzymes or processes. Several years ago, the group of David Boykin at Georgia State University (which this author was a part of for seven years) described the DNA-binding affinity and broad range antimicrobial activity of 2,5-bis(4-amidinophenyl)furan (furamidine), a heterocyclic analogue of pentamidine. Subsequent prodrug strategies with furamidine have led to the orally bioavailable methoxime derivative, which has successfully completed phase I safety trials, and is now undergoing phase II efficacy trials against *Pneumocystis carinii* pneumonia (PCP), human African trypanosomiasis (sleeping sickness), and malaria. With the goal of developing new lead compounds with even better biological activity, many structurally modified analogues of furamidine have been synthesized over the past few years at GSU. Such modifications include a) replacing the furan ring with other aromatic rings or even acyclic moieties, b) replacing the pendant phenyl rings with heterocyclic rings, and c) replacing the amidines with other basic groups (such as reverse amidines and guanidines). In biological assays performed by a variety of collaborators around the world, many of these new compounds have shown improved activity against the various microbial diseases, with the most impressive being an “aza” analogue in which one of the phenyl rings of furamidine has been replaced with a 2-pyridyl ring. This seminar will review the synthesis and biological properties of the clinical candidate furamidine, and then outline the recent results with some of the more interesting furamidine analogues, including the impressive aza-analogue



Furamidine

Section Ballot - PLEASE VOTE YOUR CHOICE -

The following candidates are placed in nomination by the section nomination committee. If you are a section member please circle the candidates name to indicate your vote for them. Otherwise you may enter a write-in candidate. If you enter a write-in candidate please verify with the candidate that he agrees to serve in the position prior to your write in.

RETURN Your BALLOT to
CHARLES CRAWFORD, SRNL, 773-41A, Aiken, SC 29808
by Oct 19 or bring to the Section Meeting on Oct 19.

BALLOT>>>>>>>>>>>>>>>>>> **Cut or Tear** >>>>>>>>>>>>>>>>>

Chair Elect: Mike Bronikowski

or Write-in Candidate ________________________________

Treasurer: Eric Zuckerman [incumbent]

or Write-in Candidate ________________________________

Secretary: Scott McWhorter [incumbent]

or Write-in Candidate ________________________________

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