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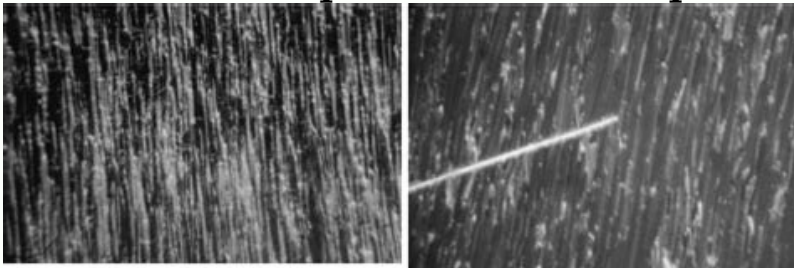
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Anthraquinone dyes structure

Structure of anthraquinone vat dyes. Structure of anthraquinone. Anthraquinone dyes list. What are anthraquinone dyes.



Please enable Javascript in order to use PubChem website. Anthraquinone (AQ) served as an organic photocatalyst in a visible-light-mediated oxidative cyclization with secondary alcohols and the oxidant DMSO leading to 67 in fair to excellent yields under ambient conditions (21JOC10747) while arylacetonitriles were identified as credible partners delivering 2-aminoquinolines 68 under basic conditions (21EJ02746).From: Progress in Heterocyclic Chemistry, 2023 Home Science Chemistry Access through your institutionVolume 34, Issue 1, May 1997, Pages 25-35 96j00061-7Get rights and contentYuzhen ZhangSandoz U.S.P 2,580,190 (1966), Swiss, 397,919..W. Schoenauer et al.W. Schoenauer et al.Two macrocyclic chemosensors with anthraquinone signaling unit incorporated into ionophore system (via positions 1 and 8) have been synthesized and subsequently their physicochemical properties became the subject of our extensive research. First ligand, labeled in the paper as AQ-Ncrown is characterized by a cyclic structure of a crown ether, while second one AQ-Ncrypt includes an additional ethoxy bridge, which ensures the bicyclic character of a cryptand. The studied macrocycles possess both oxygen and nitrogen heteroatoms in the ionophore cavity. Dualistic (chromophore and electrophore) signaling nature of described compounds, makes them potentially attractive molecular recognition systems. The aim of our research was to synthesize and analyze the spectroscopic, acid-base and redox properties of aforesaid macrocycles. Furthermore, we have combined experimental approach together with theoretical investigations. The equilibrium structures of AQ-Ncrown and AQ-Ncrypt were determined with the use of DFT calculations. The sensitivity of studied macrocycles towards interactions with protons was scrutinized. The complete pH-spectrophotometric characteristic of studied ligands together with their protolytic forms and corresponding pKa values were determined. The influence of medium (aprotic and protic solvent) on spectral effects was described. Furthermore, the molecular electrostatic potential maps for ligands and differential electron densities for their mono and dianions were calculated. The redox reactions was investigated at different pHs by cyclic voltammetry. Electrochemical results have presented intriguing phenomenon: the specific stabilization of the reduced form of the protonated molecules. The calculations have revealed that this is a consequence of barrierless intramolecular proton transfer (from the macrocycle cavity onto the anthraquinone moiety) that might occur during the reduction process in acidic medium.In the present work, the aim is to show the utilization of heterocyclic bisazo acid dyes (3a-3 h) based on 1-phenyl-3-methyl-5-pyrazolone, which was synthesized by coupling of tetrazotised 3,3'-methylene bis (2-amino-5-iodo benzoic acid) with various pyrazolone coupling components (a-h). Dyes synthesised by elemental nitrogen analysis, IR and ¹HNMR spectra were characterised. They were tested on wool and silk. The result showed good to excellent rubbing fastness and wash fastness properties as well fair to very good light fastness. Also, the absorption spectra and colorimetric data (L*, a*, b*, C*, H*, K/S) was analysed.In this work, we have presented a very detailed review of the different classification of azo dyes as a function of the number of azo groups and the appropriate functional groups. Then we pointed out some chemical properties of these dyes such as reactivity, isomerization and tautomerism and listed. In the following, we have summarized some recent syntheses of azo dyes and the mechanism of azo dye/polymer conjugation. Finally, we indicate the principle of Gewald's reaction and its application to the synthesis of new azo dyes.Six novel amino acid chromophores were synthesized and their spectroscopic, acid-base, and electrochemical properties are discussed in this work. In studied compounds, selected amino acid residues (l-Aspartic acid, l-Glutamic acid, l-Glutamine, l-Histidine, l-Lysine, l-Arginine) are attached to the 1-(piperazine) 9,10-anthraquinone skeleton via the amide bond between the carboxyl group of amino acid and nitrogen atom of the piperazine ring. All derivatives have been characterized using a variety of spectroscopic techniques (mass spectrometry, ¹HNMR, UV-Vis, IR spectroscopy), acid-base (electrochemical and UV-Vis) titrations, and cyclic voltammetry methods. Basing on observed experimental effects, supported by quantum chemical simulations, the structure-properties links were established. They are indicative of the specific interactions within and/or in-between amino acid side groups, which are prone to form both, intra- and intermolecular hydrogen bonds as well as electrostatic interactions with the anthraquinone system.Seven new dyes - aza-12-crown-4 ether derivatives containing either one or two anthraquinone substituents - were synthesized and their spectroscopic and acid-base properties are discussed in this work. The number, location, type and class of the nitrogen groups in macrocyclic ring differentiate the analyzed compounds. Spectroscopic properties of all investigated derivatives were determined by UV-Vis spectroscopy in acetonitrile:methanol (9:1, v/v) mixture over a wide pH range. The combined potentiometric and spectrophotometric titrations method was used to determine the pKa values of studied compounds. The number and location of nitrogen atoms in the macrocycle ring affects the number of acid-base equilibria and the overall basicity of the compound. Spectral changes provide the information about which of the nitrogen atoms participates in the protonation process. Each of studied compounds presents itself as a potentially good chromoionophore, with the derivative as (3) the most promising one.New four acid azo dyes were synthesized from aromatic amines containing acidic group and 3-(1,3-benzothiazol-2-yl) naphthalen-2-ol by diazotization and coupling reaction. These dyes were characterized by FTIR, ¹H NMR and mass spectral analysis. Effect of solvent polarity and role of pH on photo physical properties such as absorption, emission were studied.

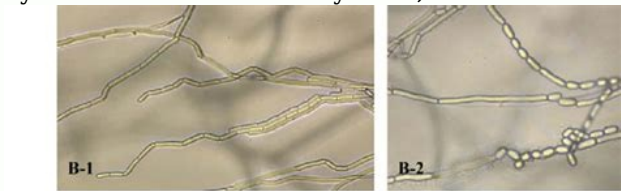
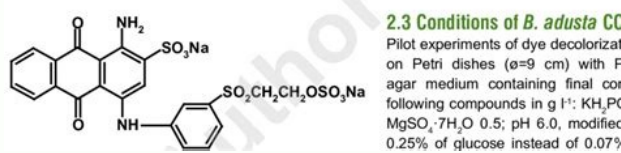
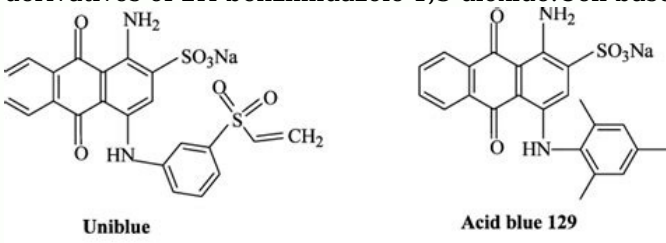


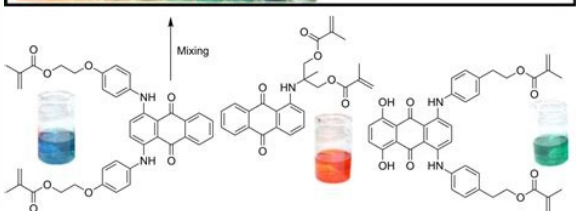
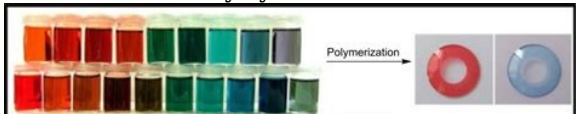
Figure 2. Microphotography of bacteria (B-1, B-2) and mature spore-producing (anthraquinone) (A-2, B-2) mycelium of *F. solani* and *Geotrichum candidum* (B) (own collection). (microscopy magnification 40x).



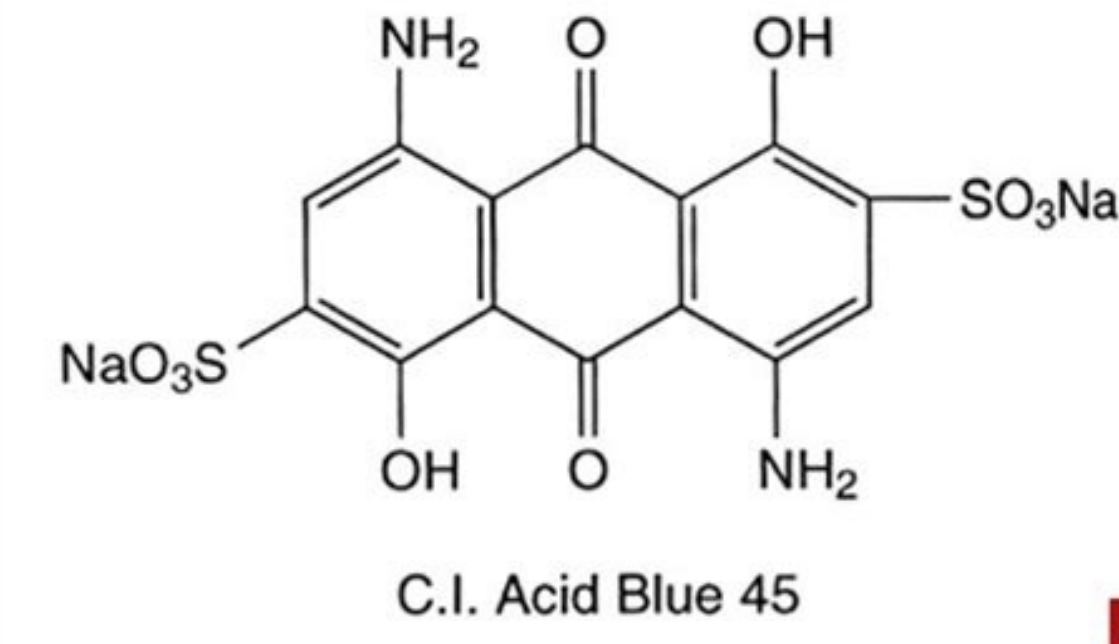
All these acid azo dyes were applied on wool, silk and nylon whereupon fastness properties were evaluated. A parallel series of dyes using 2-naphthol in place of benzothiazolyl were made to investigate the effect of benzothiazolyl moiety on the fastness and photo physical properties.View all citing articles on ScopusIn this paper, a new modified multiwalled carbon nanotube electrode is reported for anodic stripping voltammetry quantification of tin. The electrode is based on the use of N-Nitroso-N-Phenylhydroxylamine (cupferron) and multiwalled carbon nanotube. The influence of supporting electrolytes, deposition time, and applied potential on the sensitivity of electrode were investigated. The detection limit was 0.12 ng/ml and the RSD at a concentration level of 50 ng/ml, was 1.5%. The electrode has been applied for the determination of tin in fruit juice and bottled water with the satisfactory results.The synthesis of novel 2H-benzimidazole 1,3-dioxides on the basis of o-benzoquinone dioximes interaction with ketones in the presence of acids is described. Nitration of these compounds by nitric acid in acetic acid yields the 5-nitro derivatives of 2H-benzimidazole 1,3-dioxide.Cell-based therapies hold a great promise for treatment of a wide array of tragic diseases.



Specifically, the use of cellular vehicle platforms emerges as a powerful strategy for targeted delivery of therapeutics to sites of disease. In this chapter, we first review the success and current challenges of different cell therapies, focusing on pancreatic islet transplantation as well as multiple types of stem cell therapies. We then shift our discussion to cellular delivery systems.



Efficient cell targeting to desired sites is a crucial aspect towards effective use of such platforms. Accordingly, we thoroughly discuss a variety of cell engineering strategies to improve cell targeting to sites of interest. We then discuss key aspects of cellular delivery, including the types and characteristics of different nanosystems, candidate therapeutic agents and cell types suitable for this approach. Finally, we conclude with a case study of Trojan Horse cell-based cancer therapy.Phytophthora root rot (PRR) caused by Phytophthora sojae (P. sojae) is one of the serious diseases that affect soybean production. Presently, there are some problems such as threatening the environment and human health in main methods of controlling PRR. Herein, a natural polymer composite mulch film with water-triggered pesticide release prepared for the sustained control of PRR was firstly reported.



A

5 different mulch films were obtained by blending different proportions of chitosan (CS) and hydroxypropyl methylcellulose (HPMC), and the metalaxyl (Me) was then loaded in the mulch films. The proper mulch film (Me-CS50/HPMC50) was selected by the assessments of tensile property, water solubility and light transmittance, and the formation mechanism and micromorphology of Me-CS50/HPMC50 were furthering characterized. To reveal the application prospect of the Me-CS50/HPMC50 in the management of PRR, some physical and biological properties were evaluated. The pesticide release rate of Me-CS50/HPMC50 within 72 h was 70.6%, while CK was 97.3%. Besides, the in vitro antifungal and pot experiments showed that the Me-CS50/HPMC50 could against the P. sojae and the incidence rate of PRR was only 13.3%. This work can provide a new research idea, which has potential application to effectively control PRR and develop sustainable agriculture.This article deals with the development of a reduced model describing the temporal evolution of the fructo-oligosaccharide production by Aureobasidium pullulans and the optimal process control. First, a reduced model is derived from a detailed model reproducing with good accuracy the dynamics of the fructo-oligosaccharide production. The reduced model is obtained using maximum likelihood principal component analysis and parameter identification based on a weighted least squares criterion. Next, the fructo-oligosaccharide concentration at an a priori undetermined time is maximized using Pontryagin maximum principle. The methodology is analyzed based on experimental data from batch and fed-batch cultures, and results are compared with those obtained with another simple model available in the literature.The aim of the research is to investigate nano technique of wool acid dyeing without the presence of acid auxiliary agent at temperatures lower than the boiling. The wool fabrics are first pretreated with nano TiO₂ and BTCA at different concentrations. The dyeing process is then carried out on the pretreated fabrics with C. I. Acid Blue 113 and C. I. Acid Black 3 dyes. Also, the central composite design analysis is applied to design the relation between nano TiO₂ and BTCA concentrations, and dye exhaustion. The response surface methodology is also applied to find the optimum conditions for the wool fabric pretreatment. The scanning electron microscopy and X-ray diffraction are employed to indicate the presence, crystal type and size of TiO₂ nanoparticles on the wool surface. The pretreatment optimization on the wool surfaces considerably enhances the absorption of acid dyes. The suggested method demonstrates the improvement of fastness properties than control dyeing and could be introduced as a new route, disclosing various desirable multi-functional characteristics, to wool fabric. This technique is also free from some of the disadvantages of acid chemical involved in dyeing such as damage to wool fabrics than wool conventional dyeing.View full text