

on protein size, secondary structure and overall conformation will be presented. The characterization of the solution structure and oligomerization state of the Arabidopsis gamma subunit is novel and important contribution to studies on G-proteins providing insights also for the mammalian proteins

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Keywords: GTP-binding proteins, biophysical analysis, SAXS

FA1-MS05-P11

Structural Analysis of 1-aryl-3-isopropylamino-1-propanone hydrochlorides. Barış Anıl^a, Ertan Şahin^a, Ebru Mete^a, H. İnci Gül^b. ^a*Department of Chemistry, Faculty of Science, Atatürk University; Erzurum 25240, Turkey.* ^b*Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Atatürk University; Erzurum 25240, Turkey.*

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Mannich bases are generally formed by the reaction between formaldehyde, a secondary amine and a compound containing reactive hydrogen atoms. They display varied biological activities such as antimicrobial [1], cytotoxic [2,3], anticancer [2], analgesic [4], anti-inflammatory [5] and anticonvulsant [6] and DNA topoisomerase I inhibiting activities [3].

In this study, it was planned to synthesize some Mannich bases having the chemical structure of 1-aryl-3-isopropylamino-1-propanone hydrochlorides, which are possible cytotoxic/ anticancer compounds. Aryl part was changed as C₆H₅, 4-CH₃C₆H₄, 4-ClC₆H₄, 4-BrC₆H₄, 4-HOC₆H₄. The logic behind the synthesis of the compounds was to investigate the effect of substituents having different electronic nature. The chemical structures of the compounds were determined by X-Ray diffraction, ¹H-NMR, ¹³C-NMR, DEPT, gCOSY, gHMOC, GHMBC and double resonance techniques.

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Keywords: Mannich bases, X-Ray diffraction, chemical structure

FA1-MS05-P12

Experimental and DFT studies on a pyrimidine-thione derivative. Muharrem Dinçer^a, Namik Özdemir^a, İrfan Koca^b, İsmail Yıldırım^c. ^a*Department of Physics, Faculty of Arts and Sciences, Ondokuz Mayıs University, 55139, Samsun, Turkey.* ^b*Department of Chemistry, Faculty of Arts and Sciences, Bozok University, 66200, Yozgat, Turkey.* ^c*Department of Chemistry, Faculty of Arts and Sciences, Erciyes University, 38039, Kayseri, Turkey.*

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In general, pyrimidines have found much interest for their widespread potential biological activities [1] and medicinal applications, thus their chemistry has been investigated extensively [2]. In particular, various analogues of pyrimidine-thiones possess effective antibacterial, antifungal, antiviral, anti-AIDS, insecticidal and mitocidal activities [3].

FA1-MS05-P13

New developments in low power beam delivery systems with aspheric multilayer optics. Nicoleta Galatanu^a, Sergio Rodrigues^a, Ronan Mahé^a, Peter Hoghoj^a. ^a*Xenocs SA, Sassenage, France.*

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Low power microfocus X-ray sources coupled to multilayer optics are increasingly used in single crystal applications benefiting from very low maintenance requirements and high brilliance x-ray beam. The performance of these systems is typically better than traditional high power rotating anode X-ray sources in particular for small crystal analysis. However the performance remains significantly lower compared to the new generation of microfocus rotating anode sources.

We will present new developments in the field of beam delivery systems made of low power sources providing increased beam brightness (photons per second per solid angle). We have indeed developed new aspheric multilayer optics with increased capture angle and focusing properties as well as a new source optic design for single crystal diffraction applications. Such new developments provide an increased intensity (photons per second per mm²) of at least a factor two compared to previous generation of microfocus sealed tube systems.

With the collaboration of our academic partners, different crystals of various sizes have been studied with different sources optics combination and compared with rotating anode generators. We will illustrate the new developments impact for protein crystallography and single crystal diffraction applications.

Keywords: Single crystal diffraction, multilayer optics, laboratory sources

FA1-MS05-P14

SWAXS Studies on Topical Lamellar Liquid Crystal Drug Delivery Systems. Semra İde^a, Elif Hilal Soylu^b, Merve Aytekin^c, R. Neslihan Gürsoy^c, Süeda Hekimoğlu^c. ^a*Hacettepe University, Faculty of Engineering, Department of Physics Engineering, 06800 Beytepe-Ankara.* ^b*Karadeniz Technical University,*