

CENTER FOR BIOMOLECULAR THERAPEUTICS (CBT)

CIBR: Center for Innovative Biomedical Resources

CORE INSTRUMENTATION

- 600 MHz Bruker Avance III NMR Spectrometer with TCI cryoprobe
- 800 MHz Bruker Avance Spectrometer with TXI cryoprobe and BACS 60 automatic sample changer
- 950 MHz Bruker Avance III Spectrometer with TCI cryoprobe



MISSION

The objective of the Center for Biomolecular Therapeutics (CBT) is to promote the use of nuclear magnetic resonance spectroscopy for use in ongoing and new research projects at the University of Maryland School of Medicine.

CORE SERVICES

We offer assistance and training for:

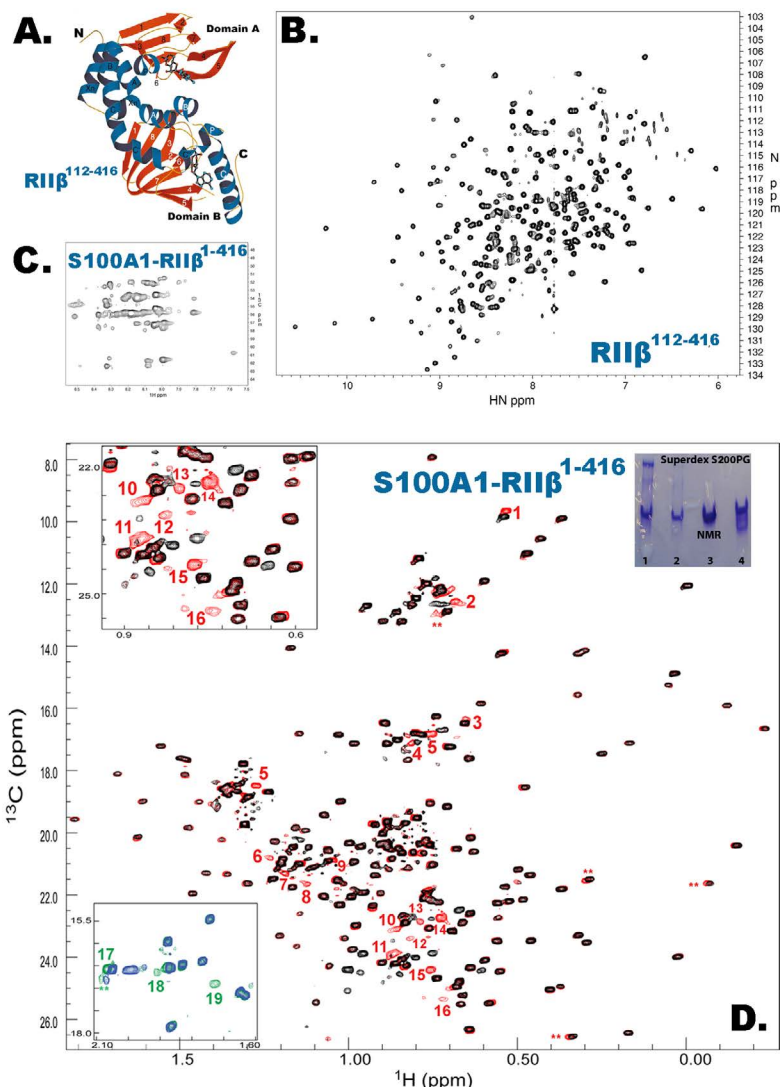
- Collecting NMR data
- Processing NMR data
- Analysis of NMR data

ADDITIONAL CORE SERVICES

- Linux and Apple workstation access for data processing and analysis
- Lab space for sample handling
- Assistance with NMR-related computer software including Bruker Topspin, NMRView, nmrPipe, nmrDraw, xplor-NIH, and several others

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Ribbon diagram of RII β ¹¹²⁻⁴¹⁶ (A) and NMR feasibility data for RII β ¹¹²⁻⁴¹⁶ (B) and ^{Ca}S100A1-RII β ¹⁻⁴¹⁶ (C, D) at 950 MHz. (A) Ribbon diagram of RII β ¹¹²⁻⁴¹⁶ (2); (B) ¹⁵N-TROSY-HSQC of [²H,¹³C,¹⁵N]-RII β ¹¹²⁻⁴¹⁶ at 950 MHz after refolding/back-exchange to give H^N protons. (C) 3D-TROSY-HNCA of [²H,¹³C,¹⁵N]-RII β ¹⁻⁴¹⁶, CaS100A1^{unlabeled} with RII β ¹⁻⁴¹⁶ back-exchanged. (D) ¹³C-TROSY-HSQC with selection of A,I,L,V-methyls in uniform [²H,¹³C,¹⁵N]-labeled PKA-RII β ¹⁻⁴¹⁶ in the absence (black) and presence of ^{Ca}S100A1 bound (red). The inset in the top left corner illustrates several chemical shift perturbations from S100A1 binding (>19 $\Delta\delta^{\text{CH}3}$ perturbations labeled with a number or **). In the lower left-hand corner (inset) is the negative contour region in the absence (blue) and presence of ^{Ca}S100A1 bound (green). In the top right (inset) is a native gel illustrating the high quality of the NMR sample (lane 3).

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