

articles

binding response after 10 s of injection was used to calculate the values in Table 2.

Regeneration, removal of the bound analyte, of the collagen coated matrix was carried out by passing 100 mM HCl over the sensor chip surface for 5 min, followed by HBS buffer flow.

Data analysis. The binding ratio at a specific analyte concentration (ν) was calculated using equation 1, where R is the SPR response, L represents the immobilized collagen, A represents the soluble CBD analyte, and MWT is the molecular weight of the proteins.

$$\nu = R(A) \text{ MWT}(L) / R(L) \text{ MWT}(A) \quad (1)$$

A plot of $\nu/[A]$ (binding ratio at a specific analyte concentration divided by that concentration) *versus* analyte concentration, $[A]$, was non-linearly fit to equation 2.

$$\nu/[A] = (BR/K_D) / (1 + [A]/K_D) \quad (2)$$

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The apparent dissociation constant (K_D) and the approximate binding ratio (BR) under these assay conditions were then determined. The BR represents the maximum number of adhesin molecules binding to one collagen molecule and is an approximation due to overlapping of the immobilized collagen strands on the matrix.

CD spectra. All CD spectra were collected using a Jasco J720 spectropolarimeter calibrated with a 0.1% (w v⁻¹) 10-camphorsulfonic acid-d solution. Spectra were measured at 25 °C and five scans were averaged. A 0.05 cm path length cell was used for near-UV (250–320 nm) CD and a 1 cm path length cell was used for far-UV (190–250 nm) CD.

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Product Review

If anyone needed convincing of the importance of the new frontier of structural biology that nuclear magnetic resonance spectroscopy (NMR) has opened up, she or he need go no further than the special *Nature Structural Biology* NMR supplement that accompanies this issue. Although superconducting magnets are of central importance to this field, they are only part of a wide range of materials needed to probe the inner workings of (or to design drugs against) macromolecules in solution (as well as the solid state).

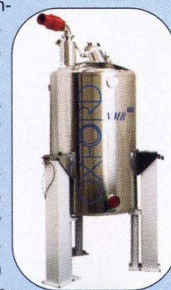
Kobelco-JMT-Magnex offers NMR magnets ranging from 300 MHz up to 800 MHz. The new JMT 800 MHz magnet requires no special containment room — it is compact, operating at the standard liquid helium temperature of 4.2 K. In fact, the overall look of the magnet is essentially identical to their 750 MHz magnet. Furthermore, operation is simple. It has nitrogen and helium hold times of >18 and >60 days respectively, with refill volumes of 105 l (helium) and 220 l (nitrogen). It offers a 54 mm RT bore diameter, a field stability of <16 Hz per hour, and a field homogeneity of <0.01 p.p.m. over 10 mm ϕ × 20 mm. Kobelco-JMT-Magnex propose that they will have a 900 MHz machine ready by 1998 and a 1 GHz by the year 2000. Oxford Instruments, NMR Instruments also introduces its new, compact 800 MHz magnet for NMR. The Oxford NMR⁸⁰⁰ operates at 4.2 K and is safe and simple to operate. The NMR⁸⁰⁰ has a central magnetic field strength of 18.7 Tesla allowing proton



JMT 800 MHz magnet

NMR resonance to be observed at 800 MHz. It also offers a unique 63 mm room temperature bore which allows use of larger diameter NMR probes necessary for maximizing high field performance.

Cherwell Scientific announces the release of version 4.0 of gNMR, a versatile NMR simulation software package. gNMR is designed for chemists who perform NMR analysis and simulation on desktop computers (Windows or Macintosh). The new features of version 4.0 include: a greater range of import/paste structure file types including ChemDraw version 4; recognition of more file types by gCVT including JEOL and FID files; performance of Fourier transform on FID files by gSPG; dynamic links between the structure, molecule window and spectrum; and direct communication between gCVT, gSPG, and gNMR. Cambridge Isotope Laboratories, Inc. (CIL) introduces its new 1997–1998 catalogue in conjunction with its celebration of 15 years of providing a diversified and high quality product line of stable isotope labelled compounds. 2000 of its 8000 compounds are featured in the new catalogue. Product highlights include NMR solvents and reference standards, amino acids, sugars, RNA/DNA products and cell growth media. CIL also invites custom syntheses.



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These notes were compiled by Tracy Smith