

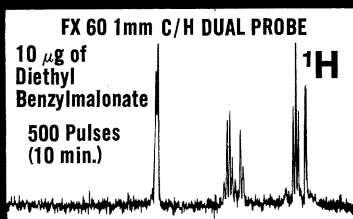
# If you're considering an FT NMR System, Consider JEOL's FX Series.

The concept behind the development of the FX Series is to provide one basic electronic system that gives each customer the option of selecting a spectrometer with the best cost/performance ratio to meet his individual FT NMR requirements.

The capabilities of this Series, with unexcelled ease of operation, range from a routine  $^{13}\text{C}/^1\text{H}$  unit up to a complete, highly sophisticated multi-frequency (i.e.  $^{19}\text{F}$ ,  $^{31}\text{P}$ ,  $^{15}\text{N}$ ) research tool. This means that JEOL can provide you with a system tailored to meet your FT NMR requirements as they exist today and as they extend into the foreseeable future.

In September of 1974 we introduced the FX 60 with the LPCS<sup>®</sup>. This instrument, together with the more recently introduced FX 100, has enabled us to establish an enviable TRACK RECORD for reliability and performance. In addition, JEOL has introduced Digital Quadrature Detection (DQD) for increased performance, Digital Phase Shifters and the Dual Frequency ( $^{13}\text{C}/^1\text{H}$ ) Probe concept for 1, 5 and 10mm VT samples. These and other innovations typify JEOL's continual effort to advance the state-of-the-art performance.

So if you're considering the purchase of any FT NMR spectrometer, consider the present, consider the future, consider JEOL.



\*Light Pen Control System

For further information about the FX Series call or write . . .

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persistence and their toxicity. Recent results, however, cast doubts on the latter. Bowes *et al.* (2) observed concentrations of highly toxic polychlorinated dibenzofurans (PCDF's) ranging from 0.1 to 0.5 microgram per gram in all but one of the North American PCB's (Aroclor). Earlier studies by Vos *et al.* (3) had indicated that only PCB's manufactured in Japan (Kanechlor) and Europe (Clophen, Phenochlor) contained such impurities. In addition, PCDF's and other by-products were recently found in "pure" PCB isomers (4).

The toxicity of PCDF's exceeds that of PCB's by approximately four to six orders of magnitude. Their presence in PCB's has, therefore, significant bearing on toxicity studies on PCB's, commercial mixtures, and isomer preparations alike. Yet, in only a small proportion of the scientific reports on this subject is the problem of PCDF impurities in PCB's discussed. Obviously, the degree of this contamination is variable with the origin and probably also with other details of the manufacturing processes.

I strongly recommend, therefore, that in all future toxicity studies and for as many past studies as can be documented, precise information on the PCB's used (source, date of manufacture, lot number, and so forth) be recorded. I further recommend that past experiments for which such information is available be reevaluated in view of the strong possibility of the presence of PCDF's and their overriding toxic effects.

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## References

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## Membrane Protein Assay

We have recently been informed that the detergent Lubrol PX, which is an important component in our new immunoelectrophoretic assay for membrane proteins (Reports, 8 Aug. 1975, p. 469), is no longer commercially available. We have tested other nonionic detergents and find that Triton N-101 (Rohm and

Haas) and Emulophogene BC 720 (GAF) may be substituted for the Lubrol PX with comparable results. Another detergent, Triton X-100, is not quite as effective in this technique since some sodium dodecyl sulfate still enters the agarose-antibody layer. When analyzing heavily loaded gels, we use a 6- to 8-millimeter strip of the detergent, 1.7 percent in agarose, slightly wider than the dimension recommended in our report, for the best results.

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## Cell Bank Established

To facilitate research on cell genetics in relation to aging, a bank of mutant and normal cells has been established by the National Institute on Aging (NIA) at the Institute for Medical Research in Camden, New Jersey. Cell cultures are developed and banked in response to research needs. Recommendations of general policy, specific policy, and selection of classes of cells or specific cell lines are made by an advisory committee. Most lines are of human origin, but a limited number of nonhuman lines with unique or valuable genetic characteristics will be accepted. Cultures are grown without antibiotics after primary culture and stored in liquid nitrogen at early passage.

This NIA Mutant Cell Bank is working in close cooperation with the National Institute of General Medical Sciences Genetic Mutant Cell Repository established at the same institution. The purpose of that repository is the study of hereditary diseases.

In addition to the responsibility for a cell repository, an annual workshop on cell culture and somatic cell genetics as they relate to aging research is held each year in May. Suggestions, inquiries, and contributions to the NIA cell bank are invited.

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