

Aims

The NMR facility is organized as a core facility to allow a better administration of the many requests from inside and outside the FMP for the use of the NMR machines or the utilization of NMR as a technique. This eased the participation in the European i-NEXT network as well as the German DFG-funded G-NMR network of facilities. The NMR core facility also serves as a platform for the use of NMR spectrometers by non-departmental groups. These include for example FMP groups that perform chemical synthesis and, thus, heavily rely on continuous NMR support as well as groups studying the interaction of proteins with peptides or small molecules that benefit from the strength of NMR to detect weak protein-ligand interactions. In addition, there are requests from groups outside the FMP for access to the NMR facility, including access to the DNP spectrometer. These other groups from Berlin and the whole of Germany use the equipment of the facility if comparable resources are not available at their own sites.

Group Members

Peter Schmieder, Senior Scientist **Nils Trieloff**, Technician (3/4)

Monika Beerbaum, Scientist (3/4) **Matthias Herreira-Glomm**, Scientist (1/2)

Brigitte Schlegel, Technician **Veniamin Chevelkov**, Scientist (1/2)

Probes

	Magnets [MHz]	Probes	Observable nuclei
Solution NMR	300 (SB)	5 mm QNP, z-gradient 5 mm BBFO, z-gradient	¹ H, ¹³ C, ¹⁹ F, ³¹ P ¹ H, ¹⁹ F, ¹⁵ N
	3 x 600 (SB)	5 mm QXI, z-Gradient 5 mm BBFO, z-Gradient 5 mm TCI Cryoprobe, z-Gradient 5 mm QCI Cryoprobe, z-Gradient 5 mm TXI, xyz-Gradient 5 mm TXI, z-Gradient 5 mm BBI, z-Gradient 8 mm TXI, z-Gradient	¹ H, ¹³ C, ¹⁵ N, ³¹ P ¹ H, ¹⁹ F, ¹⁵ N ¹ H, ¹³ C, ¹⁵ N, ³¹ P ¹ H, ¹³ C, ¹⁵ N ¹ H, ¹³ C, ¹⁵ N ¹ H, ¹³ C, ¹⁵ N
	750 (SB)	5 mm TCI Cryoprobe, z-Gradient 5 mm TXI, z-Gradient 8 mm TXI, z-Gradient	¹ H, ¹³ C, ¹⁵ N ¹ H, ¹³ C, ¹⁵ N ¹ H, ¹³ C, ¹⁵ N
	900 (SB)	5 mm TXI, z-Gradient 5 mm TCI Cryoprobe, z-Gradient	¹ H, ¹³ C, ¹⁵ N
Solid state NMR		0.7, 1.3 and 1.9 mm HCND 3.2 and 4.0 mm HCN	¹ H, ¹³ C, ¹⁵ N
	800 (WB)	1.3 mm HCND 3.2 and 4.0 mm Efree HCN 1.9 mm low temp. (DNP)	¹ H, ¹³ C, ¹⁵ N
	700 (WB)	0.7, 1.3 and 1.9 mm HCND 3.2 mm Efree HCN 3.2 and 4 mm HXY	¹ H, ¹³ C, ¹⁵ N, (³¹ P)
	600 (WB)	1.3 and 1.9 mm HXY 3.2 and 4.0 mm HXY	¹ H, ¹³ C/ ³¹ P, ¹⁵ N
	400 (WB)	3.2 mm low temp. (DNP) 3.2 mm HXY	¹ H, ¹³ C, ¹⁵ N, (³¹ P)
Imaging	400 (WB)	Live mouse imaging Spin exchange optical pumping (Xe polarizer)	Double resonance probes

Participation in G-NMR and iNEXT

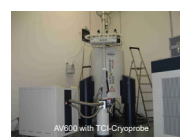
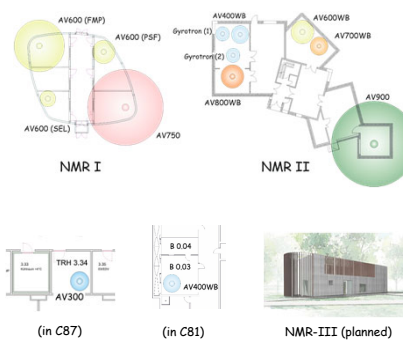


Development of teaching concepts, standardization of spectrometer tools, german NMR summer school.



Infrastructure for NMR, EM and X-rays for Translational Research

Spectrometers



Open access automation



A basic NMR service providing 1D (¹H, ¹³C, ³¹P, ¹⁹F) and simple 2D (COSY, TOCSY, HMQC, HMBC) spectra is available on dedicated open-access 300 and 600 MHz spectrometer.

Collaborations

Internal

Dorothea Fiedler
Christian Hackenberger
Volker Haucke
Ronald Kühne
Adam Lange
Marc Nazaré
Hartmut Oschkinat
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Johannes Broichhagen
Han Sun
Adam Lange
Michael Krauss

External

Christoph Rademacher, MPI Golm
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Thomas Müller, Universität Würzburg
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Robert Brinson, NIST
Theresa Carlomagno, Hannover
Erich Wanker, MDC
Harald Schwalbe, Universität Frankfurt/Main
Ricardo Pires, Federal University of Rio de Janeiro
Vera Meyer, TU Berlin

Companies

Fa. EMP biotec (Berlin-Buch)
Fa. Celares (Berlin-Buch)
Fa. S&V (Hennigsdorf)

Fa. Evotec (Hamburg)
Fa. PentixaPharm (Berlin-Buch)
Fa. OctreoPharm (Berlin-Buch)

