

## **Deposit of the iron oxides in the human spleen**

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Three samples were extracted from the human spleen of donors suffering dysfunction of the iron metabolism. Fresh material was lyophilized and subjected to investigation by the SQUID magnetometry using MPMS-XL7 apparatus (Quantum Design) [1,2]. Electron microscopy in the SEM/TEM mode confirmed the presence of the iron-oxide minerals of the scale 10 - 1000 nm.

The magnetic susceptibility has been taken at small external field  $B_{DC} = 0.1$  T in the temperature range  $T = 1.9 - 300$  K. The magnetization data was scanned at  $T = 2.0$  and  $4.6$  K with fields between  $B = 0 - 7$  T. The zero-field cooled magnetization and field-cooled magnetization (ZFCM/FCM) data was acquired at  $B = 100$  mT. The hysteresis loops have been probed between  $B = +5$  to  $-5$  to  $+5$  T.

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- [1] R. Boča, L. Dlháň, M. Kopáni, V. Mrázová, M. Miglierini, Polyhedron 66 (2013) 65–69. Deposits of iron oxides in the human spleen.
- [2] L. Dlháň, R. Krylov, M. Kopáni, R. Boča: Nova Biotechnol. Chim. 18 (2019) 52-58. Magnetic response of bovine spleen.
- [3] M. Kopáni, M. Miglierini, A. Lancok, J. Dekan, M. Čaplovicová, J. Jakubovský, R. Boča, H. Mrázová, Biometals 28 (2015) 913-928. Iron oxides in human spleen.