Information for Laboratories

ABCB1 – The gene test to optimize depression treatment
The ABCB1 test is a molecular genetic diagnostic procedure, developed at the Max Planck Institute of Psychiatry that supports doctors in treating patients with antidepressants. The doctor can base treatment decisions on the patient’s individual genetic endowment and can select a suited antidepressant at the right dosage in short time. A fast response to antidepressants is more likely if the ABCB1 test is known by the doctor. Unsuccessful therapeutic trials and unwanted side effects can be avoided.

Scientific background
The transition of an antidepressant from the bloodstream into the brain tissue is essential for its clinical effect. The transport molecule P-glycoprotein is located at the blood-brain barrier. Its function is to protect the brain from “foreign” and potentially harmful substances. For this purpose the P-glycoprotein uses a transport mechanism that also impairs the passage of most (around 70 %) antidepressants into the brain tissue.

The P-glycoprotein is encoded by the ABCB1 gene. Studies conducted at the Max Planck Institute of Psychiatry revealed that the P-glycoprotein’s effectiveness is dependent on minor variations in the DNA – single nucleotide polymorphisms or SNPs on the ABCB1 gene. These variations on particular base pairs in the ABCB1 gene influence how effectively the P-glycoprotein protects the organism from harmful substances.

Benefits of the ABCB1 test for laboratories:
- **Psychiatric laboratory diagnostic**: Through the ABCB1 test the laboratory diagnostic becomes an important element for the depression treatment for the first time.
- **Personalized medicine**: The ABCB1 test-result allows treatment with antidepressants that is matched with the individual patient’s ABCB1 genotype.
- **Faster match**: The test provides an individual recommendation of the most suitable antidepressants prior to starting the treatment or a planned change of medication.
- **A higher remission rate**: Patients treated according to the ABCB1 test results show significantly higher remission rates than patients that have not been tested. Achieving a full remission is the best predictor of a decreased risk of relapse.
- **Less side effects**: The specific selection of suitable antidepressants protects your patients from unwanted side effects.
- **Therapeutic Drug Monitoring (TDM)**: The test provides a recommendation if your patient would benefit from an additional TDM to optimize the therapy outcome as well as preventing side effects. For elderly patients and those taking various medications, TDM is strongly recommended.
- **Additional decision-making tool**: The ABCB1 test result offers recommendations regarding the suitable dosage of the right antidepressants and gives suggestions for other supportive interventions.

For further information about the implementation of the ABCB1 test in your laboratory, please visit the website: [professionals.abc1-test.com](http://professionals.abc1-test.com)