Why choose an accredited testing laboratory like Ugra?
Accreditation formally acknowledges Ugra’s competence to execute conformity assessments according to specified requirements. The aim of the accreditation is to strengthen confidence in the competence and services of the Ugra laboratory. The reports and certificates issued by Ugra thus contribute considerably to the elimination of barriers to trade.

What do we provide?
- Pre-print acceptance testing of banknote paper
- Post-print acceptance testing of finished banknotes
- Mechanical-physical, chemical and biological testing of banknote paper and banknotes according to international standards or specifications
- Verification of product features according to product specification
- Defect analysis of banknotes in the case of complaints
- Comprehensive analysis reports

Why work with us?
- Ugra is an independent Swiss association
- Confidentiality is warranted by contract
- Accredited acc. to ISO 17025 by Swiss Accreditation Service
- Experienced in banknote and banknote paper testing
- Our laboratory facilities are access-controlled

How can you work with us?
- Request for proposal → quotation/order → test performance and reporting
- Sample material is sent by traceable delivery service
- Tests are performed on time and documented by comprehensive test reports
- Delegates of the Central Bank are welcome to witness on-site testing at Ugra laboratory
- Test material can be archived, returned or safely destroyed (a Certificate of Destruction is issued)
- It is recommended to specify independent tests by accredited laboratories in tender documents

Get in touch with Ugra
Ugra is based in St. Gallen, Switzerland. You can reach us by train in 1 hour directly from Zurich Airport.

Ready to put us to the test? Take advantage of better testing and contact Mr. Mathias Schunke:
phone +41 71 552 02 41 or e-mail schunke@ugra.ch.

Swiss Accredited Testing Services for Central Banks
Examination, Analysis and Verification of Banknotes and Banknote Paper
Verification of security features
- Watermarks
- Security threads
- Microlettering
- OVI, OVMI and OVD features
- Printing features (offset, intaglio, letterpress) under UV and infrared light
- Iridescent stripes
- Serial numbers
- Security fibers visible and non-visible
- Magnetic properties
- Anti-copy/anti-scan feature
- See-through register
- Banknote design (portrait etc.) and many other features.

Environmental simulation tests
- Washing machine test at 30 °C, 60 °C and 90 °C acc. to ISO 6330
- Heat resistance up to 360 °C
- Cold resistance down to -80 °C
- Environmental simulation from -40 °C to 180 °C

Chemical tests
- for banknote paper:
  - PVOH identification
  - Hot and cold pH extraction
  - Fiber furnish analysis
- for finished banknotes:
  - Absorption of test ink (quality of varnishing)
  - Resistance to chemicals: many different chemicals available such as hydrochloric acid, sodium hydroxide, petrol and synthetic sweat.
- Biological test on circulated banknotes:
  - Total bacteria count

Comprehensive life cycle test
This test simulates the life cycle of banknotes in terms of mechanical resistance such as soiling, abrasion and crumpling. The test can be performed in four levels, each with different iterations of the test procedure:
- Ultra-soft / Soft
- Medium
- Hard
- Extreme

Finally the test evaluates the visual appearance as well as the durability of the banknotes.

A brief overview of typical test methods performed on banknotes and banknote paper

Physical tests performed on banknotes
- Resistance to abrasion
- Folding endurance
- Crumpling test
- Adhesive tape test
- Colour fastness of printing inks
- Stacking test (adhesion)
- Oscillation test (on windowed security thread)

Physical tests on banknote paper and polymer substrate
- Grammage
- Thickness
- Folding endurance
- Tearing resistance
- Tensile strength
- Plain and crumpling porosity
- Roughness / smoothness
- Internal bond strength
- Residue ash on ignition
- and many other test methods.

All tests can be performed in two different climatic conditions:
- 23 °C / 50% rh acc. to ISO 20187
- 20 °C / 65% rh acc. to ISO 20139