

Any laboratory involved in the diagnosis and treatment of bleeding disorders employing some or all of the techniques described in this manual will require a minimum of basic equipment. Note that evaluation and use of semi-automated and fully automated coagulometers are dealt with in Section 41.

THE BASIC EQUIPMENT REQUIREMENTS ARE:

- A 4°C refrigerator for reagent storage
Reagents should normally be maintained at 2°C–8°C unless otherwise stated by the manufacturer. A good-quality domestic-grade unit may be adequate.
- A deep freeze able to maintain at least -35°C
A lower temperature, such as -70°C, is useful for more prolonged storage. Clotting factors are stable at this temperature for at least six months (Woodhams et al., 2001). Freezers of -20°C are typically inadequate for storage of plasmas and reagents for many tests of hemostasis. Freezers with an auto defrost cycle are completely unsuitable.
- Regulated water bath(s) capable of maintaining temperatures of 37°C ± 0.5°C
Dry hot blocks may or may not be suitable, depending on the unit. Temperature is normally better maintained in a water bath.
- A pH meter
- A light source (for example, an Anglepoise lamp)
- Stopwatch(es)
- Calibrated automatic pipettes capable of accurate and precise delivery of sample and reagent volume in the range of 0 µl–200 µl and up to 1000 µl
It is important that the accuracy of these is checked (see Section 2).
- A calibrated pipette for delivery of liquid volumes up to 5 ml
- A centrifuge capable of generating at least 1700 g
For most coagulation analyses, centrifugation at room temperature (20°C–25°C) is acceptable. (In some techniques, 2500 g and centrifugation at 4°C are recommended.)

- A calibrated analytical weighing scale/balance capable of accurate measurement of grams to three decimal places
See Section 2 for a procedure to check accuracy.

Additional equipment is required for some procedures, including:

- a microtitre plate reader for enzyme-linked immunosorbent techniques (ELISA)
- a platelet aggregometer
- equipment specified on particular method sheets.

Air conditioning in each room is a great advantage in countries where temperatures are high.

There should be an adequate supply of consumables. Re-use of laboratory test tubes and pipette tips after washing should be avoided, since residual material can adversely affect results, causing wastage of reagents and time.

REFERENCE

Woodhams B, Girardot O, Blanco MJ, Colesse G, and Gourmelin Y. Stability of coagulation proteins in frozen plasma. *Blood Coagul Fibrinolysis* 2001; 12:229–36.