Processing Samples for Chemistry

For comprehensive metabolic panel or lipid panel

Study Type (Sample)	Blood Collection	Collecting Tube	Sample Processing				Final Volume Required
Hematology (Whole Blood)	Cheek Bleed	EDTA (lavender)	Tap and Invert 5x	Keep at RT, analyze within 4 hours			100 µL
Chemistry (Serum)	Cheek Bleed or Cardiac Puncture	Separator Gel (gold)	Clot over 1-3 hours	Spin 5 min at 7,000 RCF	Draw off supernatant serum	Freeze	300 µL
Coagulation (Plasma)	Cardiac Puncture	Citrate (9:1 whole blood to citrate)	Spin 15 min at 2,000 RCF 22°C	Spin 15 min at 2,000 RCF 22°C	Draw off supernatant plasma	Aliquot, Freeze	Varies (e.g. aPPT = 100µL)

Special Considerations

- The minimum volume required is 300 µL per each panel (e.g., a total sample volume of 600 µL is required to request both metabolic and lipid panels). There are a few ways to meet the requirement:
    - Pooling Samples
        - Same Mouse, Multiple Survival Bleeds: may be taken over regularly spaced intervals to allow the mouse to recover. Serum is prepared after each bleed, stored, and later pooled once sufficient.
        - Different Mice, Same Group: matched for age, gender, genotype, and treatment conditions.
    - Termination Bleed
    - Sample Dilution using DI Water (note: it is not recommended to dilute the sample more than 1:2, i.e., 100 µL DI water to 200 µL serum. If samples are too dilute, levels of interest may not be present at high enough levels to reach the threshold of detection and will produce inaccurate or no results.)
- If fasting, plan accordingly for time of food intake or restriction prior to sampling, as this may affect results.

Procedure

1. Collect blood into a Microtainer Serum Separator Tube(s) (SST, Gold, P/N: BD 365967).
2. Blood is allowed to clot over 4 h at room temperature.
3. Blood in the SST is then spun for 5 min at 7,000 rcf.
4. Serum supernatant is removed and placed into a 1.5-mL microfuge tube.
5. If not immediately analyzed, serum is aliquoted and frozen at -80°C. Avoid multiple freeze-thaw cycles.

6. Analysis is done using a Cobas 8000 automated chemistry analyzer (Roche) with a general coefficient of variance of <5%.