I  PURPOSE

The purpose of intravenous fluid preparation is to ensure the right concentration of medications to be administered to the piglet.

II  SCOPE

This procedure provides instructions on how to prepare medications that will be administered intravenously.

III  RESPONSIBILITIES

It is the responsibility of Metabolic Assessment Laboratory personnel to follow this procedure. It is the responsibility of supervisory personnel to ensure compliance with this procedure and to train employees and students responsible for performing this procedure. Students will report accidents to the principal investigators immediately.

IV  REFERENCES

N/A

V  REAGENTS AND MATERIALS

V.A. 2 vials of 1g Cefazolin.
V.B. 1000 units/mL Heparin.
V.C. 50mg/mL Flunixin (Banamine).
V.D. 2, 100mL bags of sterile saline.
V.E. 8mL sterile saline for in vivo use.
V.F. 2, 1cc syringes.
V.G. 4, 5cc syringes.
V.H. 4, 22-gauge needles.
V.I. Alcohol wipes.
V.J. Paper towels.
V.K. 70% ethanol.
V.L. 2, 500mL bags of Ringer’s Lactated Solution.
V.M. 100mL of 50% dextrose.
V.N. 4, 60cc syringes.
V.O. 4, 18-gauge needles.

VI  EQUIPMENT
VI.A. Sharps container
VI.B. Calculator

VII. SAFETY PRECAUTIONS

VII.A. Members of the MAL have been trained extensively in the procedures described in this SOP.
VII.B. Members of the MAL have completed animal contact training in order to work in the PNICU.
VII.C. Members have been trained on proper chemical use and handling within the fume hood and realize that human samples are to be assayed in the biofume hood.

VIII. DEFINITIONS

VIII.A. Standard Operating Procedure (SOP) – Standard Operating Procedure is a document that provides instructions for completing a specific task in the lab.
VIII.B. Metabolic Assessment Laboratory (MAL) – The Metabolic Assessment Laboratory is the laboratory that will use this SOP.
VIII.C. Piglet Neonatal Intensive Care Unit (PNICU) – The PNICU is a unit where the piglet is monitored by 24 hour care and routine check-up parameters using PNICU SOPs conducted by the MAL.

IX. PROCEDURE

IX.A. Preparations to be completed prior to the arrival of the piglet and start of survival surgery:
IX.B. Make 250mg/mL Cefazolin solution.
   IX.B.1. Attach 22-gauge needle to 5cc syringe.
   IX.B.2. Wipe access port on container of sterile saline (must be for in vivo use) with alcohol wipe.
   IX.B.3. Insert syringe, withdraw 4mL of sterile saline (making sure to remove air bubbles) and remove syringe.
   IX.B.4. Uncap Cefazolin vial or, if already uncapped, wipe top with alcohol wipe.
   IX.B.5. Insert syringe into Cefazolin vial and inject saline.
   IX.B.6. Remove needle and place syringe into Sharps container.
   IX.B.7. Shake Cefazolin vial vigorously until all of the solids dissolve.
   IX.B.8. Label the vial with white tape that says “Cefazolin (250mg/mL)” and the date of preparation.
   IX.B.9. Repeat for second vial if needed.
IX.C. Make diluted Heparin solution
   IX.C.1. Attach a 22-gauge needle to a 5cc syringe.
   IX.C.2. Uncap 1000 units/mL Heparin solution bottle or, if already uncapped, wipe top with alcohol wipe.
   IX.C.3. Insert needle, draw out 10mL of concentrated Heparin (making sure to remove air bubbles) and remove needle.
IX.C.4. Wipe access port of 100mL bag of sterile saline with an alcohol wipe.
IX.C.5. Insert needle into sterile saline bag and inject concentrated Heparin.
IX.C.6. Remove needle.
IX.C.7. Massage solution briefly to ensure mixing.
IX.C.8. Label the bag with “Diluted Heparin (100units/mL)” and the date of preparation.

IX.D. Make 2mg/mL Flunixin (Banamine) solution
IX.D.1. Attach a 22-gauge needle to a 5cc syringe.
IX.D.2. Uncap 50mg/mL Flunixin solution bottle or, if already uncapped, wipe top with alcohol wipe.
IX.D.3. Insert needle, draw out 4.17mL of concentrated Flunixin and remove needle.
IX.D.4. Wipe access port of 100mL bag of sterile saline with an alcohol wipe.
IX.D.5. Insert needle into sterile saline bag and inject concentrated Flunixin.
IX.D.6. Remove needle and place syringe into Sharps container.
IX.D.7. Massage solution briefly to ensure mixing.
IX.D.8. Label the bottle with “Flunixin (2mg/mL)” and the date of preparation.

IX.E. Make IV of Ringer’s Lactate Solution plus 5% dextrose
IX.E.1. Attach an 18-gauge needle to a 60cc syringe.
IX.E.2. Wipe the access port of one of the 500mL bags of Ringer’s Lactate Solution with an alcohol wipe.
IX.E.3. Insert needle into access port and draw out 50mL of Ringer’s Lactate Solution.
IX.E.4. Dispose of needle in a Sharps container.
IX.E.5. Attach another 18-gauge needle to a 60cc syringe.
IX.E.6. Uncap top of 50% dextrose or, if already uncapped, wipe the top of the bottle with an alcohol wipe.
IX.E.7. Insert needle into 50% dextrose container and draw out 50mL of 50% dextrose.
IX.E.8. Wipe access port of Ringer’s Lactate Solution bag with an alcohol wipe.
IX.E.9. Insert needle into Ringer’s Lactate Solution bag and inject 50mL of 50% dextrose.
IX.E.10. Write on the bag that “50mL of 50% dextrose was added to the solution” and the “final concentration of dextrose is 5%.”
IX.E.11. Repeat for additional of Ringer’s Lactate Solution.

IX.F. Preparations to be made after piglet arrives and has been weighed
IX.F.1. Calculate Flunixin dosage.
IX.F.1.a. 0.5mL/kg of 2mg/mL Flunixin solution is the recommended use.
IX.F.1.b. Multiply piglet’s weight by 0.5mL/kg to yield dosage of 2mg/mL Flunixin solution to be given.
IX.F.1.c. Write this dosage onto the survival surgery medical record and give to the survival surgery group.
X ATTACHMENTS

X.A. For a list of materials and their locations, refer to SOP# CG098.00.