[TNO/USSING/RSS/Oct07] USSING Intestine Biopsy Procedures

Method 1 – Storage, Retrieval and Transport of biopsies under ***Hypothermic*** conditions

a) AQIX® RS-S solutions are packaged in 125 mL Nalgene® containers.
b) Pre-aerate the AQIX® RS-S solution with *carbogen* [see SOP - CG] and secure the lid closure tightly on the container.
c) Store ***carbogenated*** AQIX® RS-S solution containers @ 3 – 8 ºC for not longer than **6 months**.
d) Dispatch AQIX® RS-S solution containers @ 0-4 ºC (over 'wet' ice) to tissue retrieval site in a polystyrene, outer box when temperatures are likely to exceed 25 ºC or fall below 0 ºC.
e) Maintain AQIX® RS-S solution containers @ 3 – 8 ºC at tissue retrieval site.
f) Open the 1**25 mL** AQIX® RS-S solution container for the minimum time possible during insertion of **5 - 10cm x 20 - 35 mm** intestine biopsy samples.
g) Quickly attach the lid closure on the container and close tightly.
h) Transport container back to laboratory @ 0-4 ºC (over 'wet' ice) in a polystyrene, outer box when temperatures are likely to exceed 25 ºC or fall below 0 ºC.
i) Further dissection of the intestine biopsy to obtain the experimental 0.8 cm diameter tissue sheet preparations is carried out using 'cold' (3 - 8 ºC) AQIX® RS-S solution.
j) Conduct experiments immediately on the tissue sheet preparations using a Ussing Transport Chamber using *carbogenated* AQIX® **RS-I** @ 37C [**recommended**],
or,
k) Store AQIX® RS-S container + intestinal tissue preparations in a fridge @ 3 – 8 ºC overnight prior to conducting experiments the next day using carbogenated **AQIX® RS-I** @ 37 ºC.

Method 2 – Storage, Retrieval and Transport of biopsies at ***Ambient*** Temperatures

a) AQIX® RS-S solutions are packaged in 125 mL Nalgene® containers.
b) Pre-aerate the AQIX® RS-S solution with *carbogen* [see SOP - CG] and secure the lid closure tightly on the container.
c) Store ***carbogenated*** AQIX® RS-S solution containers @ 3 – 8 ºC for not longer than **6 months**.
d) Dispatch AQIX® RS-S solution containers @ 0-4 ºC (over 'wet' ice) to tissue retrieval site in a polystyrene, outer box when temperatures are likely to exceed 25 ºC or fall below 0 ºC.
e) Maintain AQIX® RS-S solution containers @ 3 – 8 ºC at tissue retrieval site.
f) Open the 1**25 mL** AQIX® RS-S solution container for the minimum time possible during insertion of **5 - 10cm x 20 - 35 mm** intestine biopsy samples.
g) Quickly attach the lid closure on the container and close tightly.
h) Transport container back to laboratory @ ambient temperature in a polystyrene, outer box when temperatures are likely to exceed 25 ºC or fall below 0 ºC.
i) Further dissection of the intestine biopsy to obtain the experimental 0.8 cm diameter tissue sheet preparations is carried out using AQIX® RS-S or RS-I solution @ ambient temperature.
j) Conduct experiments immediately on the tissue sheet preparations using a Ussing transport chamber using *carbogenated* AQIX® **RS-I** @ 37C [**recommended**],
or,

k) Store AQIX® RS-S container + intestinal tissue preparations in a fridge @ 3 – 8 ºC overnight prior to conducting experiments the next day using carbogenated **AQIX® RS-I** @ 37 ºC.

Addendum

1. AQIX® RS-I solution may be substituted for AQIX® RS-S solution for either hypothermic or ambient temperature procurement of the skin biopsies but AQIX® RS-S solution is preferred for ambient temperature procurement.

2. If tissue contamination becomes a problem then additional AQIX® RS-I solution may be needed to thoroughly rinse the skin biopsies before inserting into the AQIX® RS-S solution specimen bottles. Additionally, 100 mg/L of Chloromycetin or 25-50mg/L of Nanomycopulitin may be added to AQIX® RS-S solution to prevent bacterial contamination without compromising the viability of the biopsy specimens.