

# 液体シンチレーション計測のためのサンプル可溶化法

SAMPLE	PROCEDURE STEPS					RECOMMENDED SAMPLE SIZE	EXPECTED <sup>3</sup> H EFFICIENCY <sup>1</sup>
	#1	#2	#3	#4	#5		
Blood	Add to 0.1-0.4 mL blood 1 mL mixture of Soluene 350:IPA (1:1) Add to 0.1-0.5 mL blood 1 mL Solvable	Stand for 2 hr at 60°C. Stand for 1 hr at 60°C.	Add 0.2-0.5 mL 30% H <sub>2</sub> O <sub>2</sub> dropwise with swirling Add 0.1 mL 0.1 M EDTA-Na <sub>2</sub> solution. Add 0.3-0.5 mL 30% H <sub>2</sub> O <sub>2</sub> in aliquots.	Stand for 15-30 min at ambient. Cap tightly and stand for 30 min at 60°C. Stand for 15-30 min at ambient. Cap tightly and stand for 1 hour at 50°C.	Add 10-15 mL Hionic-Fluor Add 10-15 mL Ultima Gold or Atomlight (Add 0.5 mL of 0.5M HCl).	Up to 0.4 mL blood Up to 0.5 mL blood	20-30% 25-35%
Plasma or Serum	Add up to 1 mL plasma or serum to 10-15 mL of Ultima Gold	Shake until clear				Up to 1 mL	30-40%
Red Blood Cells (RBC)	0.2 mL RBC suspension + 1 mL Soluene-350:IPA mixture (1:1) 0.2 mL RBC suspension + 1 mL Solvable	Stand for 1 hr at 60°C. Stand for 1 hr at 60°C.	Add 0.2-0.5 mL 30% H <sub>2</sub> O <sub>2</sub> dropwise with swirling Add 0.1 mL 0.1 M EDTA-Na <sub>2</sub> solution. Add 0.3-0.5 mL 30% H <sub>2</sub> O <sub>2</sub> in aliquots.	Stand for 15-30 min at ambient. Cap tightly and stand for 30 min at 60°C. Stand for 15-30 min at ambient. Cap tightly and stand for 30 min at 60°C.	Add 10-15 mL Hionic-Fluor Add 10-15 mL Ultima Gold	Up to 0.2 mL RBC suspension Up to 0.2 mL RBC suspension	20-30% 25-35%
Urine	Add up to 8 mL of urine to 12 mL of Ultima Gold LLT and shake vigorously					Up to 8 mL	25-35%
Phosphate Buffered Saline (PBS)	Add up to 8 mL of 0.01 M PBS to 10 mL of Ultima Gold LLT	or	Add up to 4 mL of 0.01 M PBS to 10 mL Ultima Gold	or	Add up to 10 mL of 0.01 M PBS to 10 mL Ultima Gold XR	Up to 10 mL	30-40%
Aqueous Proteinaceous Sample	Add 0.2 mL of sample to 1 mL Soluene-350 Add 0.2 mL of sample to 1 mL Solvable	Swirl until clear Swirl until clear or heat at 50°C for 30 min	Add 10 mL Hionic-Fluor Add 10 mL Ultima Gold			Up to 0.2 mL Up to 0.2 mL	35-40% 35-45%
Sucrose Solutions	Add between 3 and 7 mL of 20%-40% (w/w) sucrose to 10 mL Ultima Gold XR	or	Add between 5 and 10 mL of 30%-60% (w/v) sucrose to 10 mL Hionic-Fluor			Up to 10 mL	30-40%
Inulin Containing Fluids	Add 50 µL of inulin sample to 0.5 mL of Soluene-350 and swirl	Add 10 mL of Hionic-Fluor				Up to 50 µL	40-50%
Trichloroacetic Acid (TCA) Supernatant	Add up to 3 mL of up to 20% TCA supernatant to 10 mL of Ultima Gold LLT	For concentrations over 20%, use Hionic-Fluor				Up to 3 mL	25-40%
Homogenate	Add 0.2 mL of up to 10% tissue homogenate (in either water or 70% ethanol) to 3 mL of water	Add 10 mL of Insta-Gel Plus.	Shake vigorously		Note: Homogenates can also be prepared as for coarse-ground tissue	Up to 0.2 mL of 10% tissue homogenate	30-40%
Coarse-Ground Tissue	Add 150 mg coarse-ground tissue to 2 mL Soluene-350 and swirl Add 150 mg coarse-ground tissue to 2 mL Solvable and swirl	Stand for 3-5 hr at 60°C Stand for 3-5 hr at 60°C	Add 10 mL Hionic-Fluor Add 10 mL Ultima Gold			Up to 1.0 mL of 10% tissue homogenate. Up to 150 mg coarse-ground tissue. Up to 1.0 mL of 10% tissue homogenate. Up to 150 mg coarse-ground tissue.	35-40% 35-45%
Bacteria and Cells	Add 1 mL of 8:2 Soluene-350:water to 5-7 mg of bacteria or cells Add 1 mL of Solvable to 5-7 mg of bacteria or cells	Stand for 2-4 hr at 60°C Stand for 2-4 hr at 60°C	Add 10 mL Hionic-Fluor Add 10 mL Ultima Gold			5-7 mg of bacteria or cells 5-7 mg bacteria or cells	20-30% 35-45%
Organs	Add 1 mL Soluene-350 per: Arteries 30-100 mg Brain 50-150 mg Cartilage 20-55 mg Cornea 40-160 mg Heart 50-100 mg Add 1 mL Solvable per: Arteries 30-100 mg Brain 50-150 mg Cartilage 20-55 mg Cornea 40-160 mg Heart 50-100 mg	Stand for 2-4 hr at 60°C Intestine 80-100 mg Kidney 50-100 mg Liver 50-100 mg Muscle 100-200 mg Nerve cells 50-100 mg Stand for 2-4 hr at 60°C	Add 10-15 mL Hionic-Fluor Pancreas 50-110 mg Spleen 50-140 mg Stomach 50-100 mg Sinew 50-150 mg Add 10-15 mL Ultima Gold			See Steps 1, 2 and 3. See Steps 1, 2 and 3.	17-40% 30-45%
Feces	Add 0.1 mL water to 20 mg feces (dried), rehydrate for 30 min Add 0.1 mL water to 20 mg feces (dried), rehydrate for 30 min	Add 1 mL Soluene-350 Add 1 mL Solvable	Stand for 1-2 hr at 50°C. Add 1 mL IPA and mix. Stand for 2 hr at 50°C. Stand for 1-2 hr at 50°C. Add 1 mL IPA and mix. Stand for 2 hr at 50°C.	Add 0.2 mL of 30% H <sub>2</sub> O <sub>2</sub> dropwise with swirling Add 0.2 mL of 30% H <sub>2</sub> O <sub>2</sub> dropwise with swirling	Stand for 10 min at ambient; add 10 mL Hionic-Fluor Stand for 10 min at ambient; add 10 mL Ultima Gold	Up to 20 mg feces (dried) Up to 20 mg feces (dried)	25-35% 30-40%
TLC <sup>3</sup> scrapings	Add water soluble sample on TLC silica to 1 mL of H <sub>2</sub> O	Stand for 3-5 hr at 40°C; add 8-10 mL of Insta-Gel Plus.	Note: If samples are not water soluble, add 1 mL of Soluene-350 instead of H <sub>2</sub> O	Stand for 3-5 hr at 40°C; add 10 mL of Hionic-Fluor			30-40%
Polyacrylamide Gel Slices (PAGE)	Add 1-2 mm gel slice to 0.5 mL Soluene-350 Add 1-2 mm gel slice to 0.5 mL Solvable	Stand for 3 hr at 50°C. Stand for 3 hr at 50°C.	Add 10 mL Hionic-Fluor Add 10 mL Ultima Gold			1-2 mm gel slice 1-2 mm gel slice	45-50% 50-55%
TCA Precipitates	Moisten 100 mg of dried TCA precipitate (proteinaceous) with 0.1-0.2 mL water Moisten 100 mg of dried TCA precipitate (proteinaceous) with 0.1-0.2 mL water	Rehydrate for 30 min. Rehydrate for 30 min.	Add 1 mL Soluene-350 and stand for 30 min at ambient Add 1 mL Solvable and stand for 30 min at ambient	Add 10 mL Hionic-Fluor Add 10 mL Ultima Gold		Up to 100 mg Up to 100 mg	35-40% 40-50%
Filters	(Cellulose acetate only) Place filter on bottom of vial. Rehydrate with 0.1-0.2 mL H <sub>2</sub> O. (Cellulose nitrate only) Place filter on bottom of vial. Drying wet filters is not required. (Glass fiber and Mixed cellulose ester) Place filter on bottom of vial.	Add 0.5-1.0 mL Soluene-350; stand for 30 min at ambient. Add 5-10 mL Filter-Count. Shake several times until filter is dissolved and count. Add 1.0 mL Solvable; stand 30 min at 50°C. (Neutralize samples with acids, if necessary).	Add 10 mL Hionic-Fluor Add 10 mL Atomlight				50-55% 35-45% 25-40%

Abbreviations: 1. Tritium counting efficiency was determined on a Tri-Carb Model 2250 CA with 65% efficiency.  
2. IPA = Isopropanol  
3. TLC = Thin layer chromatogram

Note: The Model 307 Sample Oxidizer can easily be used to prepare up to 1-2 grams of any of the listed samples.