

Materials List for:

An Efficient Method for Selective Desalination of Radioactive Iodine Anions by Using Gold Nanoparticles-Embedded Membrane Filter

Ha Eun Shim^{*1,2}, Sajid Mushtaq^{*1,3}, Jongho Jeon^{1,3}

¹Advanced Radiation Technology Institute, Korea Atomic Energy Research Institute

²Department of Chemistry, Kyungpook National University

³Department of Radiation Biotechnology and Applied Radioisotope Science, University of Science and Technology

* These authors contributed equally

Correspondence to: Jongho Jeon at jeonj@kaeri.re.kr

URL: <https://www.jove.com/video/58105>

DOI: [doi:10.3791/58105](https://doi.org/10.3791/58105)

Materials

Name	Company	Catalog Number	Comments
Hydrochloric acid	DUKSAN	1129	
Nitric acid	JUNSEI	37335-1250	
Chloroauric chloride trihydrate (HAuCl ₄ ·3H ₂ O)	Sigma Aldrich	254169	
Sodium citrate tribasic dihydrate	Sigma Aldrich	71402	
[¹²⁵ I]NaI	Perkin-Elmer	NEZ033A010MC	
Sodium chloride	Sigma Aldrich	S9888	
Sodium iodide	Sigma Aldrich	383112	
Sodium hydroxide	Sigma Aldrich	S5881	
Lithium L-lactate	Sigma Aldrich	L2250	Synthetic urine
Citric acid	Sigma Aldrich	C1909	Synthetic urine
Sodium hydrogen carbonate	JUNSEI	43305-1250	Synthetic urine
Urea	Sigma Aldrich	U1250	Synthetic urine
Calcium chloride	JUNSEI	18230-0301	Synthetic urine
Magnesium sulfate	SAMCHUN	M0146	Synthetic urine
Potassium dihydrogen phosphate	JUNSEI	84185A1250	Synthetic urine
Dipotassium hydrogen phosphate	JUNSEI	84120-1250	Synthetic urine
Sodium sulfate	JUNSEI	83260-1250	Synthetic urine
Ammonium chloride	Sigma Aldrich	A9434	Synthetic urine
Sea water	Sigma Aldrich	S9148	
1x PBS	Thermo	SH30256.01	
Cellulose acetate membranes (pore size: 0.20 μm, diameter: 25 mm)	Advantec MFS	25CS045AS	
Cellulose acetate membranes (pore size: 0.20 μm, diameter: 47 mm)	Advantec MFS	C045A047A	
47 mm Glass Microanalysis Holders	Advantec MFS	KG47(311400)	
Petri dish (50 mm diameter × 15 mm height)	SPL	10050	
Gamma counter	Perkin-Elmer	2480 WIZARD ²	Model number
UV-vis spectrophotometer	Thermo	GENESYS 10	Model number

Transmission electron microscopy	Hitachi	H-7650	Model number
Field Emission Scanning electron microscope	FEI	Verios 460L	Model number