

Protein Concentration Protocol

Multipurpose Handling Medium (MHM)

INTRODUCTION

Most IVF handling media contain some amount of protein. Protein serves various roles as a supplement to media. Type and amount of protein can impact embryo development. It acts as a surfactant, and prevents sticking of embryos to pipettes and culture dishes. Additionally, protein is a potent osmolyte and is thought to have a protective effect on embryos which are subject to osmotic stresses which can occur during cell manipulation. The concentration of protein used will vary depending on the particular procedure, as well as the protocol of the individual laboratory.

PROTEIN CONCENTRATION

As mentioned, the concentration of protein used in IVF handling media, like MHM, will vary. MHM is not supplied with protein added, so protein must be added by the embryologist. It is recommended MHM be supplemented with 10% SSS-NX when used during oocyte retrieval or sperm washing (5% HSA). When used for ICSI, again, 10% SSS-NX is recommended (5% HSA). When used as a medium to wash frozen/thawed embryos, 20% SSS-NX is suggested (10% HSA). When used as a medium for embryo transfer, 10, 20, or 50% SSS-NX is recommended (5, 10, or 40% HSA).

TABLE

SSS-NX (Serum Substitute Supplement NX) and Human Serum Albumin (HSA)		
Procedure	SSS-NX	HSA
Oocyte Retrieval	10% v/v	5% v/v
Sperm Washing	10% v/v	5% v/v
ICSI	10% v/v	5% v/v
Post Cryopreserved	20% v/v	10% v/v
Embryo Transfer	10%, 20%, or 50% v/v	5%, 10%, or 40% v/v

CATALOG INFORMATION

Multipurpose Handling Medium (MHM) Catalog #90163

- Available in 100 mL and 500 mL bottles
- MHM has a shelf life of 180 days from date of manufacture
- Requires protein supplement

SSS-NX (Serum Substitute Supplement NX) Catalog #90194

- Available in kits or 100 mL bottles
- SSS-NX has a shelf life of 1 year when stored at 2° to 8°C

Human Serum Albumin (HSA) Catalog #9988

- Available in 12 x 5 mL kits
- HSA has a shelf life of 3 years when stored at 2° to 8°C