CRYO-HOS KIT
The Hypo-osmotic Swelling Test

Principle

The HOS test is based on the ability of live spermatozoa to withstand moderate hypo-osmotic stress. Dead spermatozoa whose plasma membranes are no longer intact do not show swelling. Also the dead spermatozoa with intact plasma membranes have no osmoregulatory mechanism active and show uncontrolled swelling resulting in the rupture of their over distended plasma membranes. The spermatozoa that show controlled swelling under test conditions is considered the good fraction with low osmotic fragility.

Reagents

1. Cryo-HOS reagent 1.0 ml in ampoule
   150 mOsm solution of Sodium Citrate and Fructose

Storage and Stability
Store at 2-8 °C till expiry date. Expiry indicated on label

Method:
1. Transfer the number of ampoules required to run the batch of tests to incubator at 37°C. Allow to stabilize temperature for 10-15 minutes
2. Mix 0.1 ml of liquefied semen with 1.0 ml reagent in ampoule and cover with parafilm
3. Incubate for 30 minutes at 37°C. Remix the solution and transfer one drop of sperm suspension to clean microscope slide and mount using 22x22 mm cover-slip.
4. Examine using preferably phase contrast microscope at magnification of 400x and count at least 100 (preferably 200) spermatozoa. (If phase contrast microscope is not available normal binocular microscope with reduced lighting can be used equally) Each spermatozoon is scored as either normal or showing swelling of the tail region.

Results

The result of the test is expressed as the percent swollen cells, equivalent to the proportion of osmotically competent spermatozoa. Osmotically incompetent and dead spermatozoa burst open and show straight tails.