

Supplementary Table 1. Summary of the commonly used techniques to evaluate seminal oxidative stress

Technique	Instrument	Advantages	Disadvantages
ORP	MiOXSYS	Provides a snapshot of the redox balance in real time Levels of all oxidants and reductants are measured Less time consuming Inexpensive materials Simple methodology Both fresh and frozen semen and seminal plasma can be measured	Semen age, high viscosity, and repeated centrifugation may alter results of measurements
ROS by chemiluminescence	Luminometer	Robust chemiluminescence High sensitivity and specificity Intracellular and extracellular ROS are detected	15–30 minutes to yield test results Cost and size of equipment Semen age, volume, repeated centrifugation, temperature and background luminescence may alter results of measurements
TAC	Colorimeter Luminometer	Reliable and predictive of antioxidant capacity Total antioxidants in seminal plasma measured	Cannot differentiate the amounts of enzymatic and nonenzymatic antioxidants independently Long duration of inhibition time Cost of microplate readers
ROS-TAC	Statistical analyses	Superior to ROS or TAC alone	Calculated through statistical analyses Does not directly measure ROS or TAC
MDA	Colorimeter and fluorometer for MDA-TBA adduct HPLC	Assesses lipid peroxidation	Rigorous controls required Nonspecific test Only detects <i>post hoc</i> damage

ORP, oxidation-reduction potential; ROS, reactive oxygen species; TAC, total antioxidant capacity; MDA, malondialdehyde; TBA, thiobarbituric acid; HPLC, high performance liquid chromatography.

Adapted from Agarwal et al. Ther Adv Urol 2016;8:302-318 [22].