Standardization of sperm analysis using Computer-Assisted Sperm Analysis (CASA) from Cynomolgus monkey *(Macaca fascicularis)* semen in Primate Resources Center

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Non-human primates (NHPs) are phylogenetically close to humans (*Homo sapiens*) and are appropriate animal models because of their physiological similarities to humans. NHPs are studied in physiology, neuroscience, and reproductive biology. Cynomolgus monkeys (*Macaca fascicularis*) is a well-known NHP species widely used in various studies are reproductively similar to humans. Sperm in particular are important for successful fertilization and proper embryonic development. Therefore, the purpose of this study was to accurately evaluate fertility by evaluating the sperm quality of Cynomolgus monkeys. Like this we standardized the sperm of cynomolgus monkeys male, which can be used for developmental research. Semen from five cynomolgus monkeys was recovered using an automatic electric ejaculation system. In order to standardize cynomolgus monkey sperm, we investigated the motility, viability, morphology and acrosome reaction, which are indicators of semen analysis evaluation. Average motility (%) of sperm (n=5): progressive; 81.83 ± 5.42 and non-progressive; 18.17 ± 5.42. Average vitality (%) of sperm (n=5): live; 79.03 ± 4.07 and dead; 20.97 ± 4.07. Average morphology (%) of sperm (n=5): normal; 64.27 ± 2.30, head defects; 4.86 ± 1.65, midpiece defects; 2.02 ± 0.84, tail defects; 28.09 ± 1.37, and cytoplasmic droplets; 0.76 ± 0.65. Average acrosome reaction Ca+ non-treated group (%) of sperm (n=5): non-reaction; 84.5 ± 5.6 and reaction; 15.5 ± 5.6. Average acrosome reaction Ca+ treated group (%) of sperm (n=5): reaction; 56.4 ± 1.5 and non-reaction; 43.6 ± 1.5. In conclusion, we confirmed our sperm analyzed data from cynomolgus monkeys, and the results presented are considered to indicate reproductive ability.

*** Key words) NHPs, *Cynomolgus monkey, Reproduction, Sperm, CASA***