Supplementary Table 2. Intensity features and description

Feature	Description
Mean	Average pixel intensity within the oocyte, reflecting overall brightness
Median	Middle pixel intensity value when sorted, reducing the impact of outliers
Maximum	Highest pixel intensity value, identifying the brightest regions
Minimum	Lowest pixel intensity value, indicating the darkest areas
Range	Difference between the maximum and minimum intensity values, showing brightness variation
90th percentile	Pixel intensity value at the 90th percentile, representing the higher end of the intensity distribution
Entropy	Complexity of intensity variations within the oocyte; higher values indicate more heterogeneous textures
Kurtosis	Sharpness or flatness of the pixel intensity distribution; higher values suggest more concentrated intensity around the mean
Skewness	Indicates whether the intensity distribution is asymmetric; positive values mean more high-intensity pixels, whereas negative values mean more low-intensity pixels
Variance	Measures the spread of intensity values; higher values indicate more variation in brightness
Mean absolute deviation	Average deviation of pixel intensity from the mean, showing overall intensity variation
Robust mean absolute deviation	Similar to mean absolute deviation but less sensitive to outliers, providing a more stable measure of intensity variation
Root mean squared	Square root of the mean of all the squared intensity values
Interquartile range	Difference between the 25th and 75th percentile intensity values, measuring the central range of intensity variation
Total energy	Sum of squared pixel intensity values, quantifying the overall signal strength of the oocyte image
Uniformity	Measures the evenness of pixel intensity distribution; higher values indicate more uniform brightness