

UConn

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Roles of Toll-like Receptors 7/8 (TLR7/8) in Mouse Sex Selection

Background

Sex selection is of enormous economic value in agriculture production. Treating sperm with R848, a ligand for the X-linked Toll-like receptor 7 and 8 (TLR7/8) in mice, has been shown to reduce the motility of X sperm, allowing the separation of X- and Y-bearing sperm through the swim-up procedure which subsequently afforded sex selection (Umehara et al. 2019; PLoS Biology). We aimed to utilize this finding in our studies. However, we were not able to repeat the prior published results. The previous published research also has conflicts with the cytoplasmic bridge's phenomenon during spermatogenesis, and TLR7 and TLR8 ligand R848 treatment and swim-up method is not an applicable method to select mouse sex.