FIGURE 17
Models of sperm–zona attachment during mouse fertilization. ZP3 is thought to be the sole zona glycoprotein recognized by sperm prior to the acrosome reaction. This glycoprotein appears to be recognized by at least three proteins in the outer acrosome membrane: (1) A 56,000-Da protein that specifically recognizes the terminal galactose residue of a ZP3 carbohydrate chain. (2) A sperm cell surface galactosyltransferase that recognizes an exposed N-acetylglucosamine residue of a ZP3 carbohydrate chain. (3) A protease recognizes (and presumably doesn’t digest) a peptide region of the zona glycoprotein.