

### THIS WEEK'S QUESTION:

The Insulin Lantus is a long-acting insulin that works differently from other intermediate and long acting insulin's

Which is false regarding the mechanism of action of Lantus (glargine)

1. The molecular structure of Lantus differs from human insulin by two modifications to the human insulin structure: One modification is a replacement of the amino acid asparagine with glycine at position A23
2. There are two additional arginines added to the c-Terminus of the B-chain.
3. At pH 4, Lantus is completely soluble.
4. After injection into the subcutaneous tissue, the acidic solution is neutralized, leading to formation of microprecipitates from which small amounts of Lantus are slowly released over 24 hours.

The molecular structure of Lantus differs from human insulin by two modifications to the human insulin structure: a replacement of the amino acid asparagine with glycine at position **A21**; and the addition of two arginines added to the C-terminus of the B-chain. Lantus is designed to have low aqueous solubility at neutral pH. At pH 4, Lantus is completely soluble and after injection into the subcutaneous tissue, the acidic solution is neutralized, leading to formation of microprecipitates from which small amounts of Lantus are slowly released, resulting in a relatively constant concentration/time profile over 24 hours with no pronounced peak. This profile allows once-daily dosing of the basal insulin component of antidiabetic therapy. *Lantus Package Insert.*