

The Stages of Insulin Secretion:

1. The cell membrane has potassium and calcium ion channels
2. There is generally a high concentration of potassium ions inside the cell than out
3. The potassium ion channels are open so potassium ions travel out via facilitated diffusion
4. When the blood glucose concentration is high, glucose moves into the cell
5. Glucose is metabolised to produce ATP
6. The excess ATP binds to the potassium ion channels causing it to close (as some ATP is used elsewhere)
7. The accumulation of potassium ions inside the cell alters the potential difference across the membrane- depolarises the membrane- as the inside becomes less negative
8. The change in potential causes the calcium ion channels to open
9. Calcium ions cause the vesicles of insulin to fuse with the plasma membrane
10. Insulin is released by exocytosis

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Page 2 of 2