



Above diagram (SBGN-PD) describes regulation of lac operon. The lac operon is required for the transport and metabolism of lactose in *Escherichia coli*. **Allolactose and cAMP** are messenger molecules whose concentrations increase in conjunction with **lactose and glucose** levels respectively. Based on the diagram which of these statements must be **false**?

- A) Lac Z gene is expressed in the cell even when there is no cAMP present.
- B) A mutation in the lac I gene that inhibits binding to lac operon will shut down lactose production.
- C) LacZYA is upstream of Lac I
- D) Lac Z catabolyzes Lactose, creating a negative feedback loop.
- E) Without allolactose, changing cAMP levels does not effect Lac A expression levels.