**RNA pH-METER:-**

The RNA pH-meter is a new part that initiates translation only at alkaline conditions. It was first observed in *Escherichia coli*, asthe 5’UTR preceding the *alx* locus, termed the SraF gene, having two stable RNA structures. The first structure, the N structure, is formed at neutral pH and the second structure termed the H structure is formed at higher pH. In the N structure, multiple stem loops occlude the Shine Dalgarno sequence thereby inhibiting translation whereas in the H structure the Shine Dalgarno sequence is exposed to the incoming ribosome thereby facilitating translation. Hence, this way, the SraF 5’UTR can be made to function as a pH sensitive translational riboswitch which induces translation in alkaline conditions. Therefore placing a protein coding sequence downstream of the 5’UTR leads to pH sensitive translation of said protein.

(circuit diagram)

(flowchart)