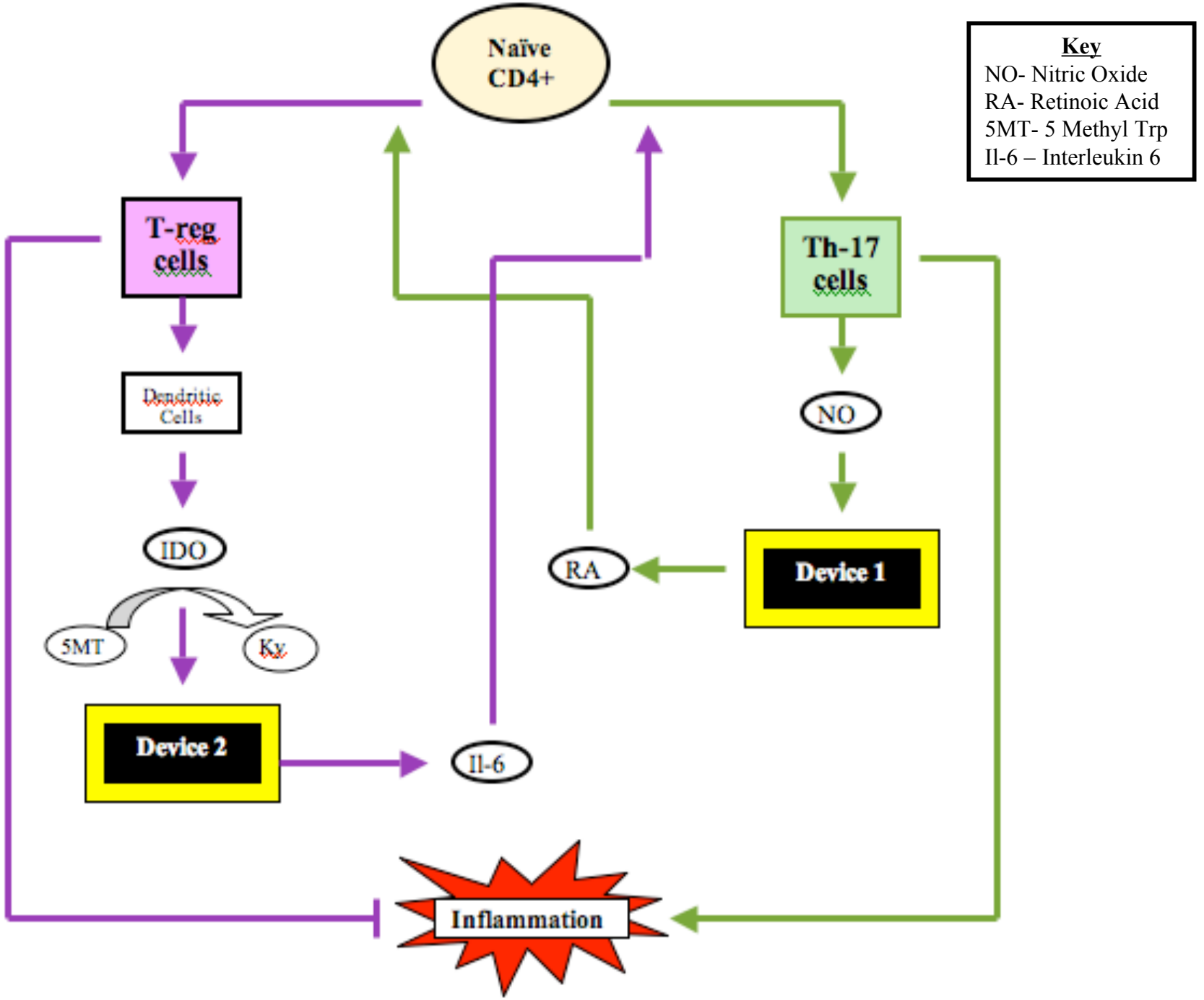
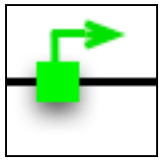
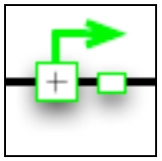

Naïve CD4+
T-reg cells
Th-17 cells
Dendritic Cells
NO
IDO
RA
Device 1
5MT
Ky
Device 2
Il-6
Inflammation
Key
NO- Nitric Oxide
RA- Retinoic Acid
5MT- 5 Methyl Trp
Il-6 – Interleukin 6

# Key for Diagrams- Using sBOL-V

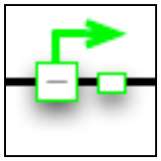
**“AND” Gate- both inputs are necessary for an output.**



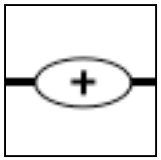
**Constitutive Promoter**



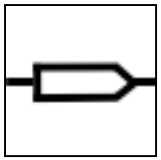
**Inducible Promoter**



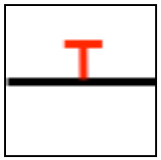
**Repressible Promoter**



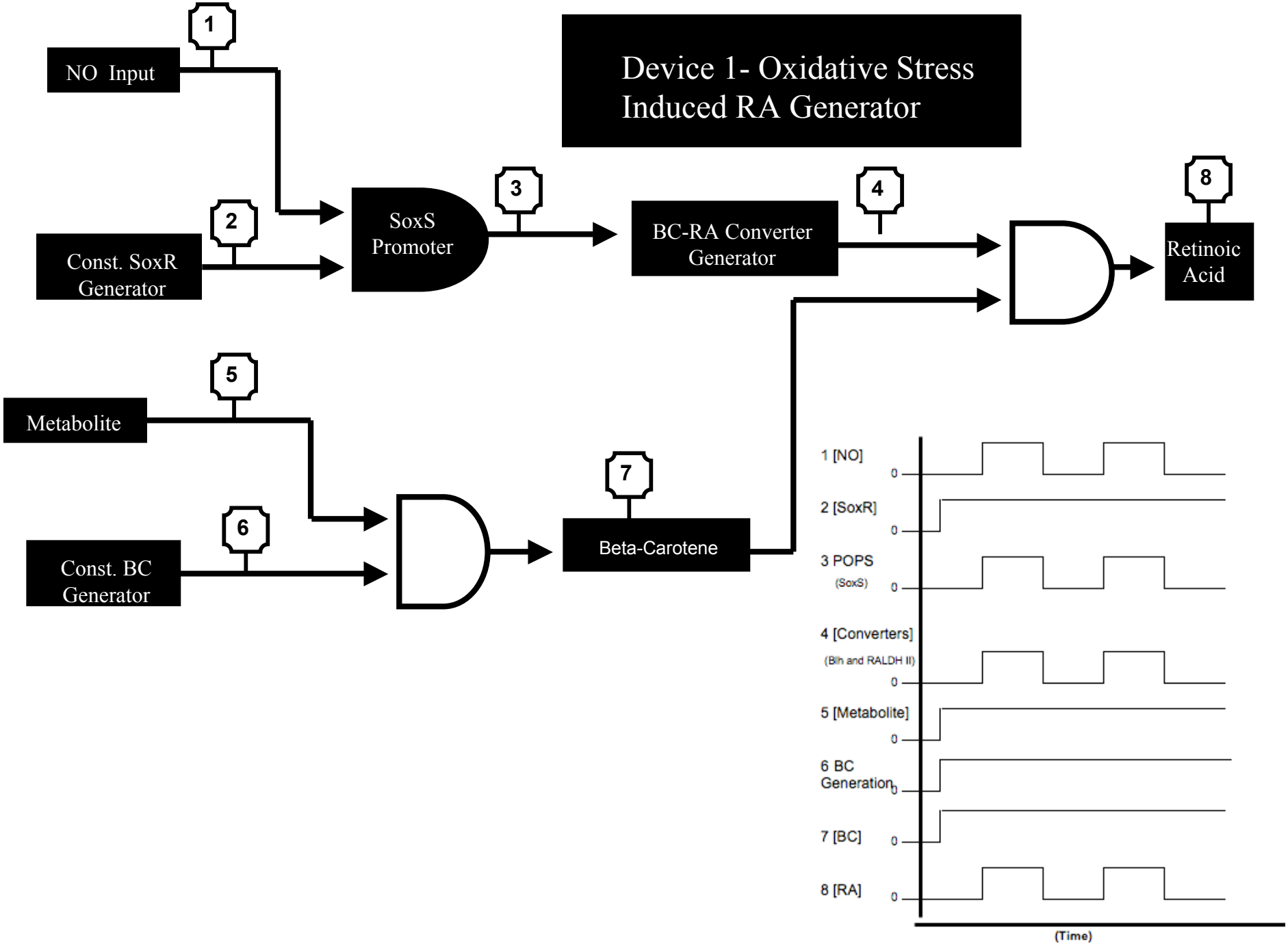
**Ribosome Binding Site**



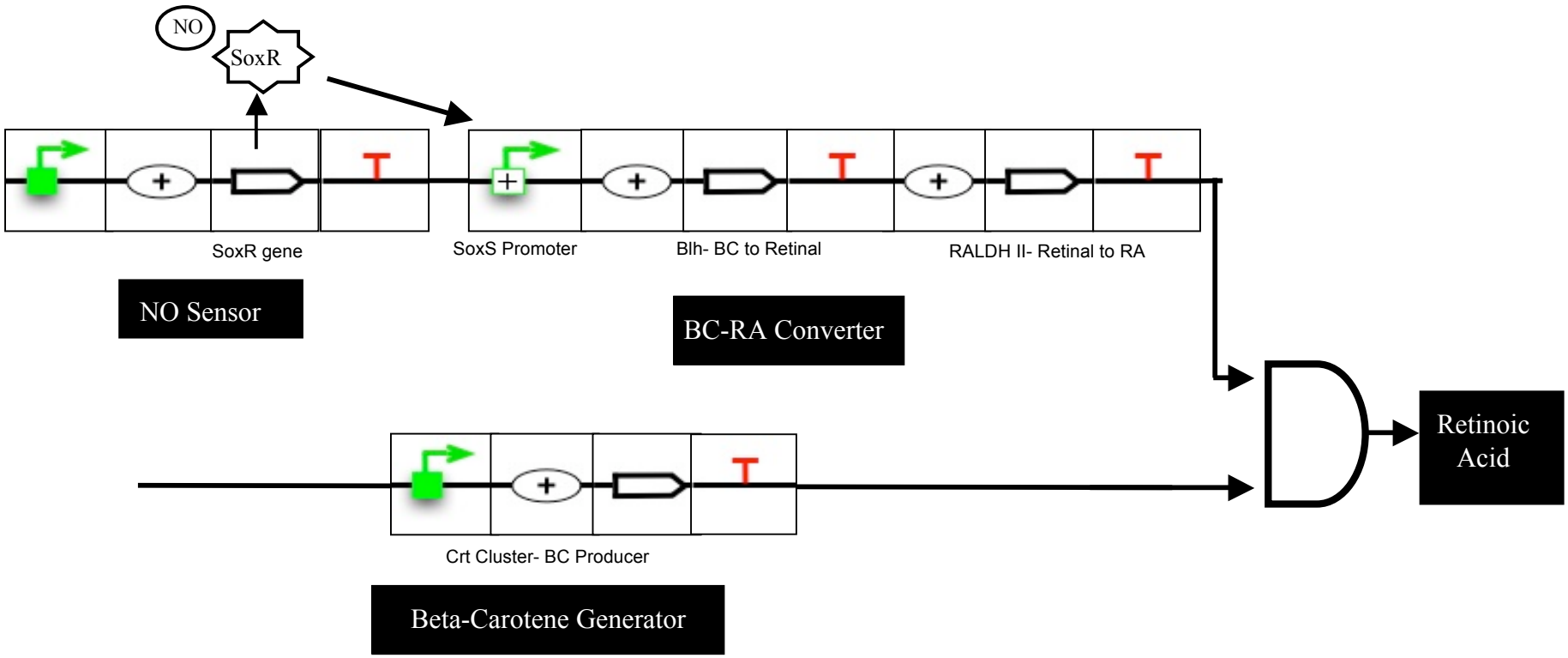
**Open Reading Frame**



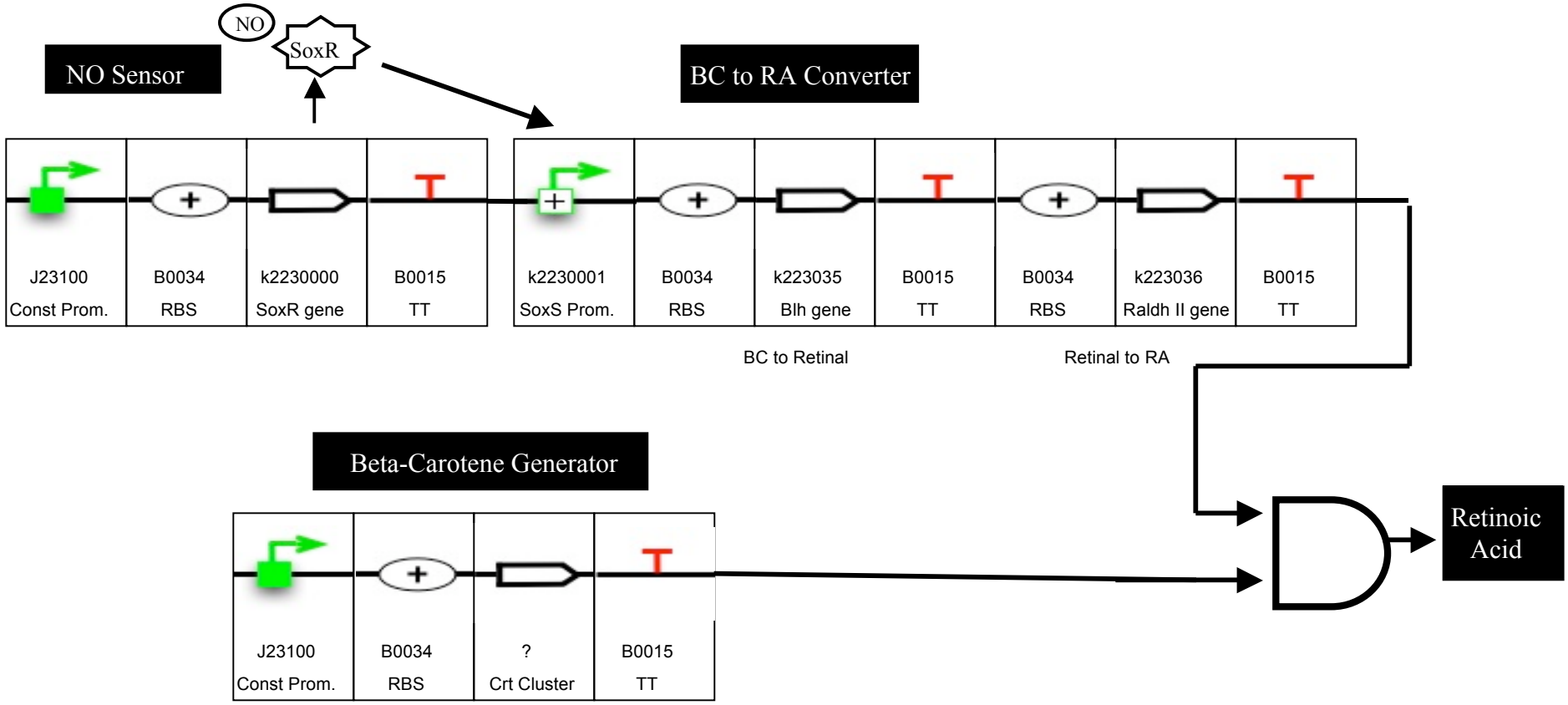
**Terminator**


Device 1- Oxidative Stress Induced RA Generator
1
NO Input
2
Const. SoxR Generator
SoxS Promoter
3
BC-RA Converter Generator
4
8
Retinoic Acid
5
Metabolite
6
Const. BC Generator
7
Beta-Carotene
1 [NO]
0
2 [SoxR]
0
3 POPS
(SoxS)
0
4 [Converters]
(Blh and RALDH II)
0
5 [Metabolite]
0
6 BC Generation
0
7 [BC]
0
8 [RA]
0
(Time)

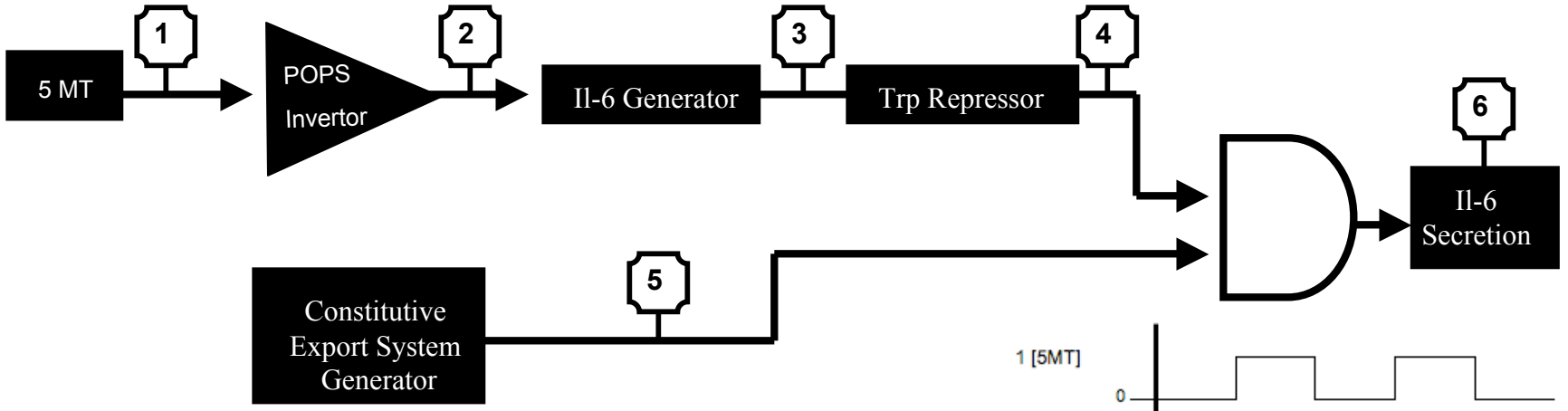
# Device 1- Oxidative Stress Induced RA Generator

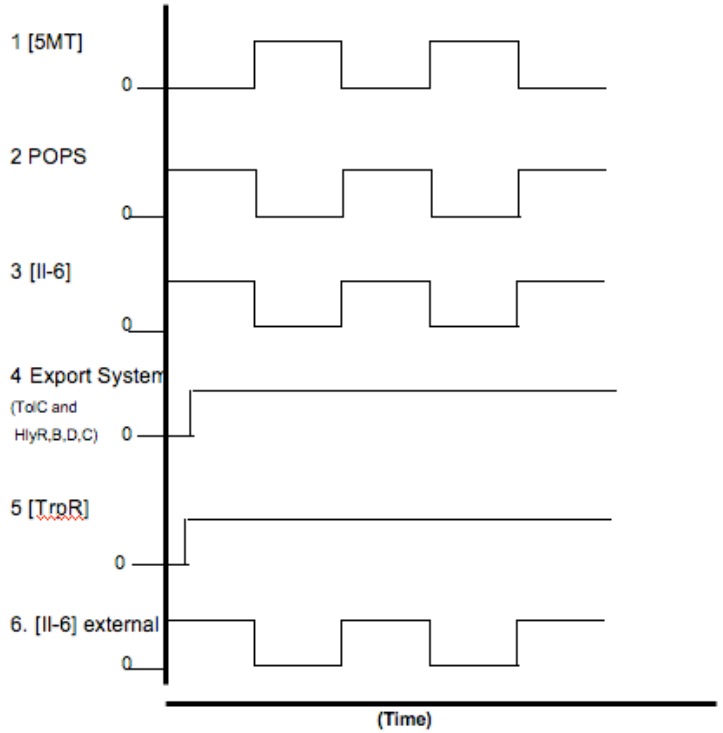


# Device 1- Oxidative Stress Induced RA Generator



# Device 2- Il-6 Secretion System



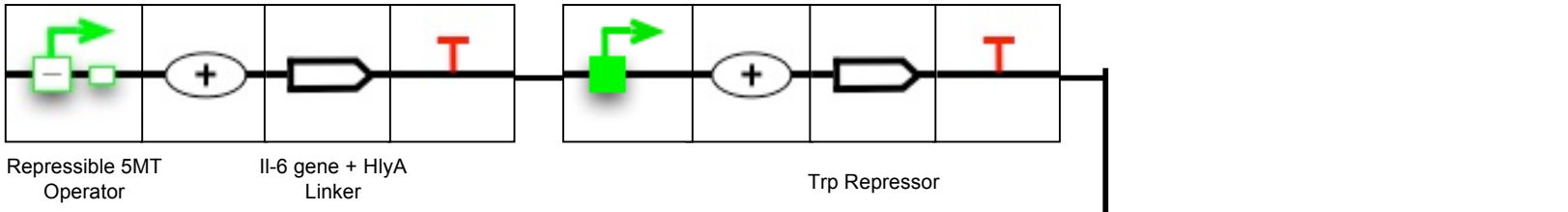



# Device 2

**5MT Level Sensitive Sensor**

**Il-6 Generator**

**Trp Repressor**



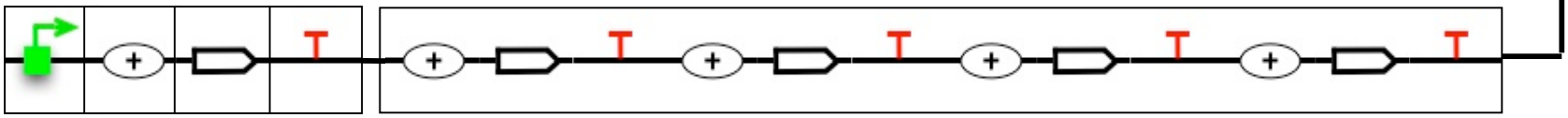
Repressible 5MT Operator

Il-6 gene + HlyA Linker

Trp Repressor

Il-6 Secreted

**Export System**



TolC gene

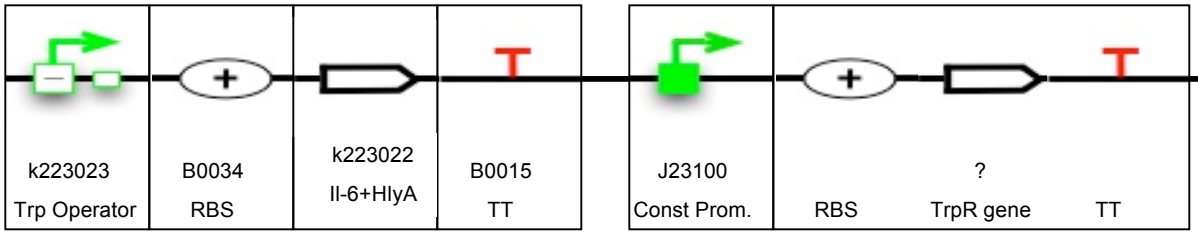
Hly R,B,D,C

**Create an Export Channel and Chaperone**

# Device 2

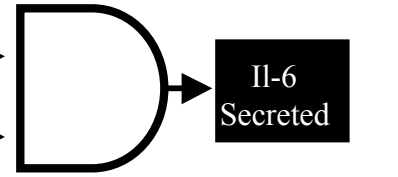
**5MT Level Sensitive Sensor**

**Il-6 Generator**

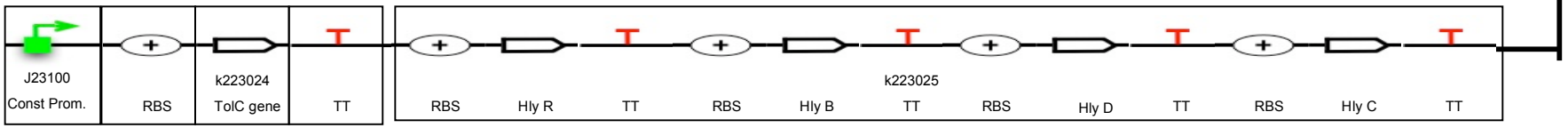



Il-6 + HlyA Linker allows Il-6 to leave through the export channel

Trp Repressorl




**Export System**




Create an Export Channel and Chaperone