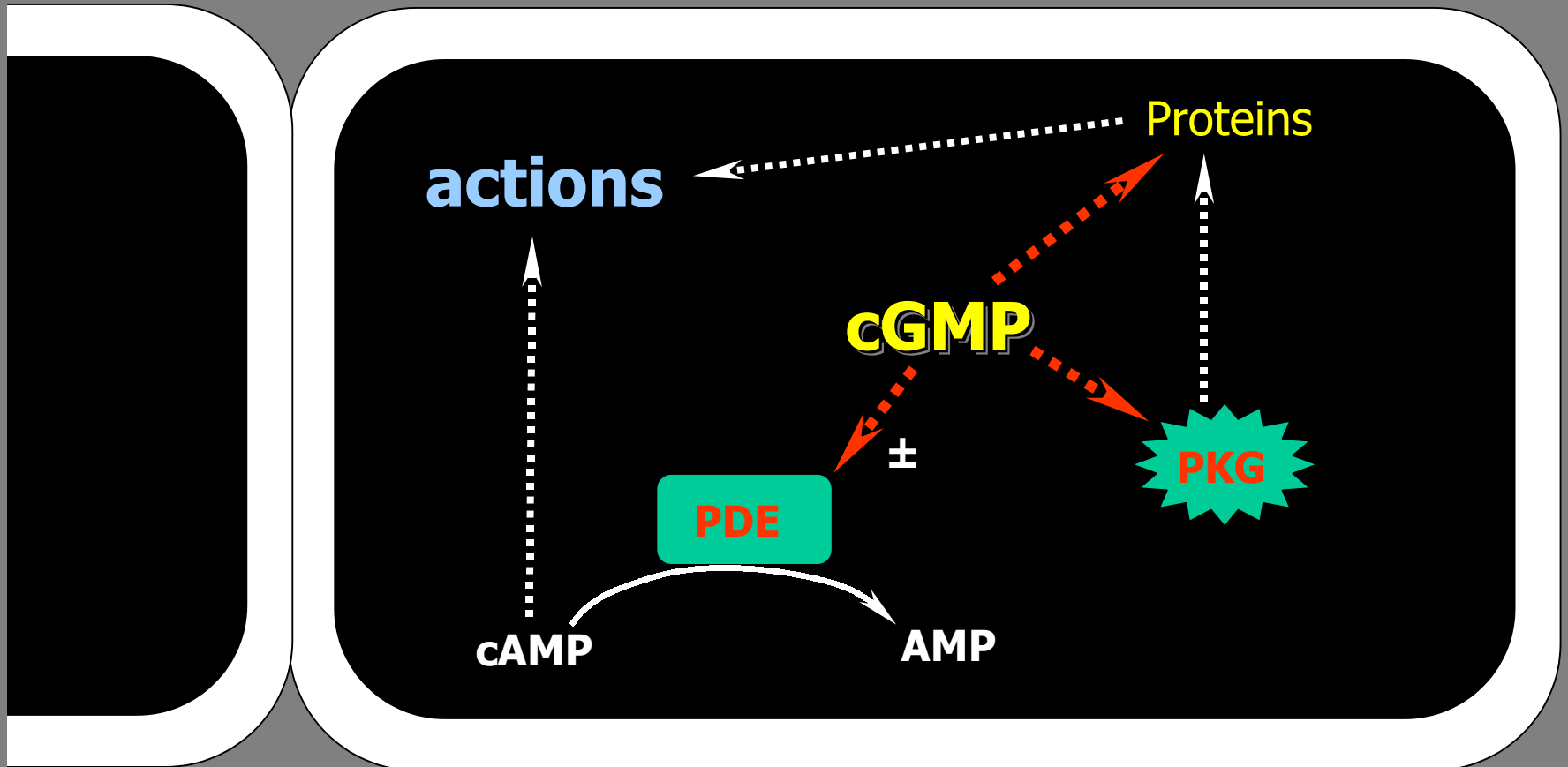


The cGMP Pathway (I)

Introduction to the cGMP pathway

Initial effectors



Final effectors in myocardial cells

Cardiomyocytes

Endothelial cells

Smooth muscle cells

- Relaxation

Blood cells

- Inhibition of platelet aggregation
- Decrease of neutrophil adhesion

Final effectors in myocardial cells

Cardiomyocytes

- Inhibition of Na^+/H^+ -exchanger
- Decrease of intracellular Ca^{2+} concentration:
 - *Inhibition of L-type Ca^{2+} channels*
 - *Inhibition of IP_3 receptor in the SR*
 - *Activation of $\text{Na}^+/\text{Ca}^{2+}$ -exchanger*
 - *Activation of Ca^{2+} -ATPase*
 - *Increase of hyperpolarization*

Final effectors in myocardial cells

Cardiomyocytes

- Inhibition of Na⁺/H⁺-exchanger
- Decrease of intracellular Ca²⁺ concentration
- Decrease of Ca²⁺ affinity of myofibrils
- Prevention of hypercontracture
- Reduction of intercellular communication through *gap-junctions*

Final effectors in myocardial cells

Endothelial cells

- Prevention of macromolecule permeability
- Decrease of adhesion molecule expression
- Modulation of NO synthesis