

The diagram shows a horizontal chain of repeating units enclosed in a rectangular box. Each unit consists of an oxygen atom (O) connected to two ethylene groups (-CH2-CH2-). The chain is represented as a continuous sequence of these units, with the first and last units having bonds extending outwards to indicate the polymer continues.

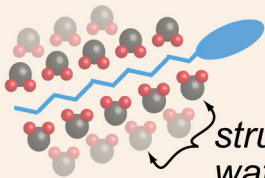
maximum length (*all-trans*) = $n \times 0.35 \text{ nm}$


1. PEG is longer than most other polymers due to solvation

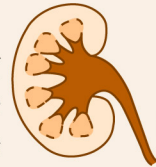


PEG
Solution Length
 $= n \times (0.35)^{0.64} \text{ nm}$

- ## 2. PEG-attachement Increases Serum Half-life of Drugs

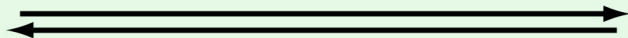
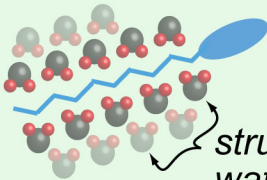


 (1) block metabolic enzymes



(2) *reduce filtration*

- ### 3. PEG-attachment Reduces On/Off Rates via “Drag”



slowed diffusion to and away from binding site



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- #### 4. PEG-attachment Reduces K_d/k_{on} by Steric Blocking

