```
breed [reactants reactant]    ;; reactants are green, products are red
breed [products product]

to setup
  clear-all
  set-default-shape reactants "molecule1"
  set-default-shape products "molecule2"
  create-reactants number
    [ set color green
      setxy random-xcor random-ycor ]
  reset-ticks
end

to go
  ask turtles
    [ rt random-float 10 - random-float 10  ;; wander around randomly
      fd 1 ]
  ask turtles
    [ ifelse (breed = reactants)
        [ react-forward ]  ; reactants
        [ react-backward ] ; products
    ]
  tick
end

to react-forward
  if (any? other reactants-here) and
     ;; multiply k1 rate constant by the initial concentration of rate-limiting reactant - either PS or CIP - which
is adjustable
     random-float 1 < (0.273 * number)
    [ ask one-of other reactants-here
        [ die ]
      set breed products
      set color red ]
end

to react-backward
  if (random-float 1000) < k1
    [ set breed reactants    ;; change back to reactant
      set color green
      ;; then split into two reactants
      hatch 1 [ set heading random 360 ] ]
end


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```