دلالات الرموز:

- EC50 :**EC50_HistR**لمستقبلات الهيستامين.
- EC50 :**EC50_HistR_NC**لمستقبلات الهيستامين غير التنافسية.
- EC50 :**EC50_nAchR**لمستقبلات الأسيتيل كولين النيكوتينية.
- EC50 :**EC50_AchEsterase**لمستقبلات أستيل كولين استراز.
- EC50 :**EC50_mAchR**لمستقبلات الأسيتيل كولين الماوسكارينية.
- EC50 :**EC50_mAchR_NC**لمستقبلات الأسيتيل كولين الماوسكارينية غير التنافسية.
- EC50 :**EC50_OpR**لمستقبلات الأفيونات.
- EC50 :**EC50_Alpha_AdrenR**لمستقبلات ألفا الأدرينالية.
- EC50 :**EC50_Alpha2_AdrenR**لمستقبلات ألفا 2 الأدرينالية.
- EC50 :**EC50_Beta_AdrenR**لمستقبلات بيتا الأدرينالية.
- EC50 :**EC50_PLC_Inhibition**لمثبط فوسفوليبيز C.
- EC50 :**EC50_IP3R**لقناة IP3.
- EC50 :**EC50_CaChannelV**لقناة الكالسيوم من النوع V.
- EC50 :**EC50_CaChannelR**لقناة الكالسيوم من النوع R.
- EC50 :**EC50_CaStore**لمخزن الكالسيوم.
- EC50 :**EC50_BTXB**للسم العصبي بوتولينوم من النوع B.
- EC50 :**EC50_BTXE**للسم العصبي بوتولينوم من النوع E.
- EC50 :**EC50_NaChannel**لقناة الصوديوم.
- EC50 :**EC50_KChannel**لقناة البوتاسيوم.
- EC50 :**EC50_ECCoupling**لاقتران الإثارة-الانقباض.
- EC50 :**EC50_Ca**لأيون الكالسيوم.
- EC50 :**EC50_Mg**لأيون المغنيسيوم.

ثوابت البداية

```
Drugs[i].EC50_HistR := 1E30 ;
Drugs[i].EC50_HistR_NC := 1E30 ;
Drugs[i].EC50_nAchR := 1E30 ;
Drugs[i].EC50_AchEsterase := 1E30 ;
Drugs[i].EC50_mAchR := 1E30 ;
Drugs[i].EC50_mAchR_NC := 1E30 ;
Drugs[i].EC50_OpR := 1E30 ;
```

```
Drugs[i].EC50_Alpha_AdrenR := 1E30 ;
Drugs[i].EC50_Alpha2_AdrenR := 1E30 ;
Drugs[i].EC50_Beta_AdrenR := 1E30 ;
Drugs[i].EC50_PLC_Inhibition := 1E30 ;
Drugs[i].EC50_IP3R := 1E30 ;
//Drugs[i].EC50_CaI := 1E30 ;
Drugs[i].EC50_CaChannelV := 1E30 ;
Drugs[i].EC50_CaChannelR := 1E30 ;
Drugs[i].EC50_CaStore := 1E30 ;
Drugs[i].EC50_BTXB := 1E30 ;
Drugs[i].EC50_BTXE := 1E30 ;
Drugs[i].EC50_NaChannel := 1E30 ;
Drugs[i].EC50_KChannel := 1E30 ;
Drugs[i].EC50_ECCoupling := 1E30 ;
Drugs[i].EC50_Ca := 1E30 ;
Drugs[i].EC50_Mg := 1E30 ;
Drugs[i].Tissue := 0 ;
Drugs[i].Units := 'M' ;
Drugs[i].Unknown := False ;
Drugs[i].FinalBathConcentration := 0.0 ;
Drugs[i].DisplayBathConcentration := 0.0 ;
Drugs[i].BathConcentration := 0.0 ;
```

الادوية المثبتة بالتجارب :

```
NumDrugs := 0 ;

Drugs[NumDrugs].Name := 'Histamine' ;
Drugs[NumDrugs].ShortName := 'His' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_HistR := 2E-7*RandG(1.0,0.05) ;
```

```
//Drugs[NumDrugs].EC50_mAchR := 1E-3*RandG(1.0,0.05) ; Removed V2.1
Drugs[NumDrugs].Antagonist := false ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Mepyramine' ;
Drugs[NumDrugs].ShortName := 'Mep' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_HistR := 2E-10*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 1.5E-5*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Carbachol' ;
Drugs[NumDrugs].ShortName := 'Cch' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_nAchR := 5E-5*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 5E-8*RandG(1.0,0.05) ;
Drugs[NumDrugs].Tissue := tGPIleum + tChickBiventer + tJejunum ;
Drugs[NumDrugs].Antagonist := False ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Atropine' ;
Drugs[NumDrugs].ShortName := 'Atr' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_HistR := 2E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 1E-9*RandG(1.0,0.05) ;
```

```
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum + tChickBiventer + tJejunum  + tRatDiaphragm ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Tubocurarine' ;
Drugs[NumDrugs].ShortName := 'Tub' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_nAchR := 1E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum + tChickBiventer + tRatDiaphragm ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Morphine' ;
Drugs[NumDrugs].ShortName := 'Mor' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_OpR := 4.0E-8*RandG(1.0,0.05) ; {21/8/18 3.5E-8->4.0E-8}
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Loperamide' ;
Drugs[NumDrugs].ShortName := 'Lop' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_OpR := 1E-7*RandG(1.0,0.05) ; ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Inc(NumDrugs) ;
```

```
Drugs[NumDrugs].Name := 'Naloxone' ;
Drugs[NumDrugs].ShortName := 'Nal' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_OpR := 1.5E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'KCL' ;
Drugs[NumDrugs].ShortName := 'KCL' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_CaChannelV := 4E-2 ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tArterialRing ;
Inc(NumDrugs) ;

idxNoradrenaline := NumDrugs ;
Drugs[NumDrugs].Name := 'Noradrenaline (Norepinephrine)' ; // Alpha + beta adrenoceptor agonist
Drugs[NumDrugs].ShortName := 'Nor' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Alpha_AdrenR := 5E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_Alpha2_AdrenR := 5E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_Beta_AdrenR := 1E-5*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tArterialRing + tJejunum ;
Inc(NumDrugs) ;
```

```
Drugs[NumDrugs].Name := 'Phenylephrine' ; // alpha-adrenoceptor agonist (jejunum)
Drugs[NumDrugs].ShortName := 'Phe' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Alpha_AdrenR := 2E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum + tJejunum ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'U73122' ;
Drugs[NumDrugs].ShortName := 'U73' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_PLC_Inhibition := 1E-8 ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tArterialRing ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Heparin' ;
Drugs[NumDrugs].ShortName := 'Hep' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_IP3R := 0.01 ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tArterialRing ;
Drugs[NumDrugs].Units := 'mg/ml' ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Calcium' ;
Drugs[NumDrugs].ShortName := 'Ca' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
```

```
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tRatDiaphragm ;
Drugs[NumDrugs].Unknown := True ;
iCaBath := NumDrugs ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Prazosin' ; // Alpha-adrenoceptor antagonist
Drugs[NumDrugs].ShortName := 'Pra' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Alpha_AdrenR := 3E-8*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tJejunum + tArterialRing ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Propranolol' ; // Beta-adrenoceptor antagonist (jejunum)
Drugs[NumDrugs].ShortName := 'Pro' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Beta_AdrenR := 1E-7*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tJejunum + tArterialRing ;
Inc(NumDrugs) ;

// Yohimbine (alpha-2 adrenoceptors antagonist)
Drugs[NumDrugs].Name := 'Yohimbine' ;
Drugs[NumDrugs].ShortName := 'Yoh' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Alpha2_AdrenR := 5E-6*RandG(1.0,0.05) ;
```

```
Drugs[NumDrugs].Antagonist := True ; ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := False ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Isoprenaline' ; // Beta-adrenoceptor antagonist (jejunum)
Drugs[NumDrugs].ShortName := 'Iso' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Beta_AdrenR := 2E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tJejunum ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Nifedipine' ; // Calcium channel blocker
Drugs[NumDrugs].ShortName := 'Nif' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_CaChannelV := 1E-7*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tArterialRing ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Thapsigargin' ; // SR Calcium uptake pump blocker
Drugs[NumDrugs].ShortName := 'Tha' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_CaStore := 1E-7*RandG(1.0,0.05) ;  // Note thapsigargin is NOT an IP3R
                                                           antagonist
  Drugs[NumDrugs].Antagonist := True ;              // but no distinction is made in current model
 Drugs[NumDrugs].Tissue := tArterialRing ;          // between block of release from stores by IP3
```

```
                Inc(NumDrugs) ;                    // depletion of stores

Drugs[NumDrugs].Name := 'SKF96365' ; // SR channel blocker
Drugs[NumDrugs].ShortName := 'SKF' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_CaChannelR := 5E-5*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tArterialRing ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Acetylcholine' ; // Cholinoceptor agonist
Drugs[NumDrugs].ShortName := 'Ach' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_nAchR := 5E-4*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 4.2E-7*RandG(1.0,0.05) ; {21/8/18 4.2E-8->4.2E-7 Ach less
                                                        potent on mAChr}
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum + tChickBiventer + tJejunum + tRatDiaphragm ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Neostigmine' ; // Cholinesterase inhibitor
Drugs[NumDrugs].ShortName := 'Neo' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_AchEsterase := 1E-7*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tChickBiventer  + tRatDiaphragm ;
Inc(NumDrugs) ;
```

```
Drugs[NumDrugs].Name := 'Suxamethonium' ; // Depolarizing neuromuscular blocker / Nicotinic agonist
Drugs[NumDrugs].ShortName := 'Sux' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_nAchR := 1E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tChickBiventer  + tRatDiaphragm ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Pilocarpine' ; // Cholinoceptor agonist
Drugs[NumDrugs].ShortName := 'Pil' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_nAchR := 1E-5*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 1.65E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum + tChickBiventer  + tJejunum ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Hyoscine' ; // Cholinoceptor antagonist
Drugs[NumDrugs].ShortName := 'Hyo' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_nAchR := 2E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 1E-7*RandG(1.0,0.05) ; {21/8/18 1E-10 > 1E-7M Hyoscine less potent}
Drugs[NumDrugs].Tissue := tGPIleum + tChickBiventer ;
Drugs[NumDrugs].Antagonist := True ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Adrenaline (Epinephrine)' ; // Alpha + beta adrenoceptor agonist
```

```
Drugs[NumDrugs].ShortName := 'Adr' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Alpha_AdrenR := 1E-5*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_Alpha2_AdrenR := 1E-5*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_Beta_AdrenR := 5E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tArterialRing + tJejunum ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Tetrodotoxin' ;
Drugs[NumDrugs].ShortName := 'TTX' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_NaChannel := 1E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tRatDiaphragm  + tChickBiventer ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := '4-aminopyridine' ;
Drugs[NumDrugs].ShortName := '4AP' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_KChannel := 2E-4*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tRatDiaphragm  + tChickBiventer ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Dantrolene' ;
Drugs[NumDrugs].ShortName := 'DAN' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
```

```
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_ECCoupling := 5E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tRatDiaphragm ;
Inc(NumDrugs) ;

Drugs[NumDrugs].Name := 'Magnesium' ;
Drugs[NumDrugs].ShortName := 'Mg' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Mg := 1.0 ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tRatDiaphragm ;
Drugs[NumDrugs].Unknown := True ;
iMgBath := NumDrugs ;
Inc(NumDrugs) ;

// Unknown drugs

// MP220: Oxybutynin: Muscarinic antagonist
Drugs[NumDrugs].Name := 'MP220' ;
Drugs[NumDrugs].ShortName := 'MP220' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_HistR := 2E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 1E-9*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Inc(NumDrugs) ;
```

```
Drugs[NumDrugs].Name := 'Drug 1' ; // Histamine antagonist / weak musc.

Drugs[NumDrugs].ShortName := 'Dr1' ;

Drugs[NumDrugs].FinalBathConcentration := 0.0 ;

Drugs[NumDrugs].BathConcentration := 0.0 ;

// V1.8 2011-12

// Drugs[NumDrugs].EC50_HistR := 1E30 ; // Mep=2E-10M

//Drugs[NumDrugs].EC50_HistR_NC := 2E-9*RandG(1.0,0.05) ; // Low affinity, non-competitive action

// V2.2 2012-13

//Drugs[NumDrugs].EC50_HistR := 1E-8 ; // Mep=2E-10M    comp. ant 100X less potent than mepyramine

//Drugs[NumDrugs].EC50_mAchR := 8E-6*RandG(1.0,0.05) ;


// V2.3 2013-14

//Drugs[NumDrugs].EC50_HistR := 1E30 ; // Mep=2E-10M    comp. ant 100X less potent than mepyramine

//Drugs[NumDrugs].EC50_HistR_NC := 1E-9*RandG(1.0,0.05) ; // Non-comp ant slightly less potent than mepyramine

//Drugs[NumDrugs].EC50_mAchR := 8E-6*RandG(1.0,0.05) ;


// V2.5 2014-15

Drugs[NumDrugs].EC50_HistR := 1.5E-11*RandG(1.0,0.05) ; // Mep=2E-10M competitive antagonist X10 more potent than mep

Drugs[NumDrugs].EC50_HistR_NC := 1E30;//*RandG(1.0,0.05)

Drugs[NumDrugs].EC50_mAchR := 8E-6*RandG(1.0,0.05) ;


Drugs[NumDrugs].Antagonist := True ;

Drugs[NumDrugs].Unknown := True ;

Drugs[NumDrugs].Tissue := tGPIleum + tChickBiventer ;

Inc(NumDrugs) ;


Drugs[NumDrugs].Name := 'Drug 2' ; //

Drugs[NumDrugs].ShortName := 'Dr2' ;
```

```
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
// V1.8 2011-12 Muscarinic antagonist / weak hist.
// Drugs[NumDrugs].EC50_HistR := 1E-6*RandG(1.0,0.05) ;
// Drugs[NumDrugs].EC50_mAchR := 1E-10*RandG(1.0,0.05) ; // Atr=1E-9
// V2.2 2012-13 Muscarinic antagonist (less potent than atropine)/ weak hist.
//Drugs[NumDrugs].EC50_HistR := 1E-5*RandG(1.0,0.05) ;
//Drugs[NumDrugs].EC50_mAchR := 1E30 ;
//Drugs[NumDrugs].EC50_mAchR_NC := 5E-9*RandG(1.0,0.05) ; // non-comp. ant.

//V2.3 2013 (Competitive antagonist (more potent that atropine)
//Drugs[NumDrugs].EC50_HistR := 1E-5*RandG(1.0,0.05) ;
//Drugs[NumDrugs].EC50_mAchR := 8E-11*RandG(1.0,0.05) ;
//Drugs[NumDrugs].EC50_mAchR_NC := 1E30 ;//

//V2.5 2014 (non-competitive antagonist (100X less potent that atropine)
Drugs[NumDrugs].EC50_HistR := 1E-5*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 1E30 ;//8E-11*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR_NC := 1E-7*RandG(1.0,0.06) ;//

Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum + tChickBiventer ;
Drugs[NumDrugs].Unknown := True ;
Inc(NumDrugs) ;

// Drug A: (mu-opioid agonist) (10X more potent than morphine)
Drugs[NumDrugs].Name := 'Drug A' ;
Drugs[NumDrugs].ShortName := 'DrA' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_OpR := 5E-9*RandG(1.0,0.05) ; // Decreased from 1E-7 16.01.19
```

```
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Inc(NumDrugs) ;

// Drug B: Clonidine: alpha 2 agonist
Drugs[NumDrugs].Name := 'Drug B' ;
Drugs[NumDrugs].ShortName := 'DrB' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_Alpha2_AdrenR := 5E-7*RandG(1.0,0.05) ; //Increased from 2E-6 16.01.19
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Inc(NumDrugs) ;

// Drug C: Verapamil (Ca channel blocker)
Drugs[NumDrugs].Name := 'Drug C' ;
Drugs[NumDrugs].ShortName := 'DrC' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_CaChannelV := 1E-7*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Inc(NumDrugs) ;

// Drug D: Oxybutynin: Muscarinic antagonist
Drugs[NumDrugs].Name := 'Drug D' ;
Drugs[NumDrugs].ShortName := 'DrD' ;
```

```
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_HistR := 2E-6*RandG(1.0,0.05) ;
Drugs[NumDrugs].EC50_mAchR := 1E-9*RandG(1.0,0.05) ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Inc(NumDrugs) ;

// Botulinum toxin B
Drugs[NumDrugs].Name := 'Botulinum Toxin B' ;
Drugs[NumDrugs].ShortName := 'BTXB' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_BTXB := 1e-2 ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Drugs[NumDrugs].Units := 'ml' ;
Inc(NumDrugs) ;

// Botulinum toxin B + Anti-B antibody
Drugs[NumDrugs].Name := 'Botulinum Tox. A+B Antibody' ;
Drugs[NumDrugs].ShortName := 'BTX-AB' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_BTXB := 1e-10 ;
Drugs[NumDrugs].Antagonist := True ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Drugs[NumDrugs].Units := 'ml' ;
```

```
Inc(NumDrugs) ;

// Sample A (Botulinum toxin B)
Drugs[NumDrugs].Name := 'Sample A' ;
Drugs[NumDrugs].ShortName := 'SamA' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_BTXB := 1e-2 ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Drugs[NumDrugs].Units := 'ml' ;
Inc(NumDrugs) ;

// Sample B (Botulinum toxin B)
Drugs[NumDrugs].Name := 'Sample B' ;
Drugs[NumDrugs].ShortName := 'SamB' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
Drugs[NumDrugs].EC50_BTXB := 1e-2 ;
Drugs[NumDrugs].Antagonist := False ;
Drugs[NumDrugs].Tissue := tGPIleum ;
Drugs[NumDrugs].Unknown := True ;
Drugs[NumDrugs].Units := 'ml' ;
Inc(NumDrugs) ;

// Sample C (Botulinum toxin E)
Drugs[NumDrugs].Name := 'Sample C' ;
Drugs[NumDrugs].ShortName := 'SamC' ;
Drugs[NumDrugs].FinalBathConcentration := 0.0 ;
Drugs[NumDrugs].BathConcentration := 0.0 ;
```

Drugs[NumDrugs].EC50_BTXE := 1e-2 ;

Drugs[NumDrugs].Antagonist := False ;

Drugs[NumDrugs].Tissue := tGPIleum ;

Drugs[NumDrugs].Unknown := True ;

Drugs[NumDrugs].Units := 'ml' ;

Inc(NumDrugs) ;

ثوابت الرقم 9 و 10

mAch_EC50 := 1E-6 ;

nAch_EC50 := 2E-6 ;

MaxReleasedAch := mAch_EC50*4.0 ;

قانون الرقم 12

// Randomly vary maximal response of next agonist application

NextRMax := MeanRMax*RandG(1.0, RMaxStDev) ;

دلالات رموز مهمة للادوية

FinalBathConcentration: تعيين التركيز النهائي للدواء في الحمام إلى صفر .

DisplayBathConcentration: تعيين التركيز المعروض للمستخدم للدواء إلى صفر .

BathConcentration: تعيين التركيز الفعلي للدواء في الحمام إلى صفر.

قيم افتراضية للرقم 14

// Set bath Ca and Mg concentrations to default Krebs values

Drugs[iCaBath].FinalBathConcentration := 2.5E-3 ;

Drugs[iCaBath].DisplayBathConcentration := 2.5E-3 ;

Drugs[iMgBath].FinalBathConcentration := 1E-3 ;

Drugs[iMgBath].DisplayBathConcentration := 1E-3 ;