Raw values and variables from our models

Variables and statistics

Variable	Value
N. benthamiana µU of antagonist produced per plant	8,481.6
N. benthamiana Hypertrans/PVX µU of antagonist produced per plant	223,200,000
N. tabacum (cv. TI95) µU of antagonist produced per plant	1.498959×10^6
N. tabacum (cv. TI95) Hypertrans/PVX µU of antagonist produced per plant	1.2474×10^{10}
N. tabacum (cv. I 64) µU of antagonist per plant	1.904532×10^6
N. tabacum (cv. I64) Hypertrans/PVX µU of antagonist produced per plant	2.583×10^{10}
Dose multiplier for TSI to reduce cAMP production by half (IC_{50})	0.077333333333333
Dose multiplier for TSI to reduce cAMP production by maximally (90%)	0.266666666666667
Average concentration of TSI in a non-severely affected patient (µU TSI/ml serum)	841.35
Average concentration of TSI in a severely affected patient (µU TSI/ml serum)	1009.62
Average concentration of TSI in an average affected patient (µU TSI/ml serum)	925.485
Average volume of blood serum in a human (ml)	2850
Estimated number of people in the US with Graves Disease	1,615,500
Average leaf mass of N. benthamiana (g)	10
Average leaf mass of N. tabacum (CV. TI95) (g)	110
Average leaf mass of N. tabacum (CV. I 64) (g)	410
Average protein density in N. benthamiana (mg/g)	6.2
Average protein density in N. tabacum (CV. I 64 follows average) (mg/g)	17.5
Average protein density in N. tabacum (CV.TI95 about 1.8x CV I64) (mg/g)	31.5
EPO (31kDa) concentration (ng/mg TSP) in N. benthamiana (Assume antagonist (28kDa) concentration is the name	11.4
EPO (31kDa) concentration (ng/mg TSP) in N. tabacum (CV. TI95) (Assume antagonist (28kDa) concentration is the name	36.05

EPO (31kDa) concentration (ng/mg TSP) in N. tabacum (CV. I 64) (Assume antagonist (28kDa) concentration is the name	22.12
Number of international units (IU) of TSH per mg of TSH (assume antagonist is the same, as the structure is only very slightly different)	12
Number of international µU per IU	1,000,000
cAMP produced per cell in severely affected patient (pmol)	0.00105
cAMP produced per cell in non-severely affected patient (pmol)	0.000875
cAMP produced per cell per µU of TSI in attomols (pmol)	1.04 (0.00000104)
Number of N. benthamiana plants needed to treat one severely-affected person once	90.474398424881
Number of N. benthamiana plants needed to treat one non-severely-affected person once	75.395182683125
Number of single severe treatments per N. benthamiana plant	0.0111
Number of single non-severe treatments per N. benthamiana plant	0.0133
Number of N. benthamiana hypertrans/PVX plants needed to treat one averagely affected person once	0.003151633512545
Number of single average treatments per N. benthamiana hypertrans/PVX plant	317.2958
Number of N. tabacum (CV. TI95) plants needed to treat one severely-affected person once	0.5120
Number of N. tabacum (CV. TI95) plants needed to treat one non-severely-affected person once	0.4266
Number of single severe treatments per N. tabacum (CV. TI95) plant	1.9533
Number of single non-severe treatments per N. tabacum (CV. TI95) plant	2.344
Number of N. tabacum (CV. TI95) hypertrans/PVX plants needed to treat one averagely affected person once	$5.639286515953182 \times 10^{-5}$
Number of single average treatments per N. tabacum (CV. TI95) hypertrans/PVX plant	1.7733×10^{4}
Number of N. tabacum (CV. I 64) plants needed to treat one severely-affected person once	0.4029
Number of N. tabacum (CV. I 64) plants needed to treat one non-severely-affected person once	0.3358
Number of single severe treatments per N. tabacum (CV. I 64) plant	2.4818
Number of single non-severe treatments per N. tabacum (CV. I 64) plant	2.9782

Number of N. tabacum (CV. I 64) hypertrans/PVX plants needed to treat one averagely affected person once	$2.723362756484708 \times 10^{-5}$
Number of single average treatments per N. tabacum (CV. I 64) hypertrans/PVX plant	3.6719×10^{4}
Number of N. benthamiana plants needed to treat every sufferer in the US once	$1.339811541399922 \times 10^{8}$
Number of N. benthamiana Hypertrans/PVX plants needed to treat every sufferer in the US once	$5.091463939516128 \times 10^{3}$
Number of N. tabacum (CV. TI95) plants needed to treat every sufferer in the US once	$7.581359805705159 \times 10^{5}$
Number of N. tabacum (CV. TI95) Hypertrans/PVX plants needed to treat every sufferer in the US once	91.102673665223660
Number of N. tabacum (CV. I 64) plants needed to treat every sufferer in the US once	$5.966897648871219 \times 10^{5}$
Number of N. tabacum (CV. I 64) Hypertrans/PVX plants needed to treat every sufferer in the US once	43.995925331010450

Tables

Plant variant	µU of antagonist per plant
N. benthamiana	8481.6
N. tabacum (CV. TI 95)	1.50×10^{6}
N. tabacum (CV. I 64)	1.90×10^{6}
N. benthamiana Hypertrans/PTV	223200000
N. tabacum (CV. TI 95) Hypertrans/PTV	1.25×10^{10}
N. tabacum (CV. I 64) Hypertrans/PTV	2.58×10^{10}

Plant variant	Number of plants to treat one severely affected person once
N. benthamiana	90.47439842
N. tabacum (CV. TI 95)	0.512
N. tabacum (CV. I 64)	0.403

Plant variant	Number of plants to treat one less-severely affected person once
N. benthamiana	75.39518268
N. tabacum (CV. TI 95)	0.427
N. tabacum (CV. I 64)	0.336

Plant variant	Number of plants to treat every sufferer in America once
N. benthamiana	1.34×10^8
N. tabacum (CV. TI 95)	7.58×10^5
N. tabacum (CV. I 64)	5.97×10^5
N. benthamiana Hypertrans/PTV	5.09×10^3
N. tabacum (CV. TI 95) Hypertrans/PTV	91.10267367
N. tabacum (CV. I 64) Hypertrans/PTV	43.99592533