(Nat/K+ ATPase).

- o de transporters-require an established gradient some direction-symporter or opposite " antitransporter.
- o coca cola-made of coca plant + Kola Nut.

  Ugive tagle is provide caffeine

  + flavour.
- before 1903, cocaine was in coca Cola.

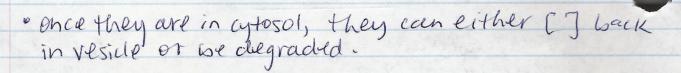
  Baffelts monoamine neurotransmittly
  in the brain.
- o monoamine NT- only have one camine group is dopamine, novepi, serotonin. Is dopamine is a precursor of norepi
- · most are 6-protein coupled receptors.
- substantia nigra + ventral tegmentom = where departie + limbic system = controls mood is.
- · dopamine is important for behaviour reinforcements, motor control.
- o novepinephrine controls the sheep-wake Cycle

  g present on pres ynaptic terminals on

  plasma membrane.
- or are apprached transporters } to get vid of NT.

transporters of monocemine NT:

- · DAT & let anat more, 101- and 1 departine us these share molecular structure.
- . One polypeptide chain but 12 Hansmembrane domang



· VoV, type proton pump-s pump protons into vesicle. · Vesicular monoaenine transporter (VOTAT) so not very · regulire DAT to cellow NT receptake selective. · also need monocemine transporter to [] back in

reside.

. DA outoreceptors - will to the release of NT's

· cocaine blocks the uptake of NT'S (blocks DAT)

## Psychostimulants

· cocaine, amphetamine, methamphetamine.

· blocks transporters for departine: have more departine in synaptic cleft.

ampheteemine- gets into terminal by transporter or diffusion

Lo goes into synaptic vesicles + affects Htgradilet i. dopamine gets released into Synaptic terminal

basso affects MAO - degraded departine monounine exidase.

· "arousal, alertness, give feeling of euphonia

oused to be used to treat narco lepsy (sleep-loomuch)

· ritilin so used to treat ADD

lois an amphetamine analog.

· also I's appetite.

· creates a dependence + addictive + many cause depression.

now still use completamine to treat soldiers shelp them stay awalce

Protak-an inhibitor for sevatorin transporter Loused to treat depression.

SSRI'S-selective Serotonin reuptake inhibitors
us: famount of serotonin in the synaptic cleft.
Labillion & inclustry!

estill don't have a cure for this type of mood disorder.

by removing the transporter, you can detect
on 1 in the amount of NT (1) if etime) but
I release.

6 4 synthesis.

· monoamine NT's play a role in mood + depression. · SSRI has been used to treat depression.

Parkinson's disease-0.230 of people over 65. Lesome people lose the ability to move their muscles. Le have some tremors + @ the end cause muscle rigidity

o Decurs in substantia nigra -> region of the brain that is pigmented.

Is in Parkinson's, get loss of the majority of these heurons -> make departine.

MPTP => a toxin that kills depaininergic neurons.

Is in mid 1970's, early 80's, there was a shortage of herein ... people tried to make an analog of heroin ... meperidine (MPPP)

Barry kidston => tried to make HPPP. himself in his basement was one point, got into problem in Synthesis when he injected it into his body, he developed Parkinson's. It his is big he injected MPTP instead which kills dependence of neurons.

MPTP- can pass through dopamine transporter or neurotoxic ble it produces free radicals in mitochohdria + affect ATP production.

- vit you inject tePTP into animals is DAT knockout, with not have an effect.
- of the of people in China develop Parkinson's maybe will there is more pollution (more neurotoxins).

Neuropathic pain - caused by damages of nevre fibers & require for sending signal to the brain

when the threhold for pain I's.

weny hard to treat ble still need these fibers.

wellated to pathway that ends in cingular cortes.

e pain pathways go from the spiral cord > brain
usif inhibitory signal, will inhibit this pathway
(mediated by GABA > K+/C1- transporter) = KCC2

it you openact channel, ci will flow inside cell

in neopathic pain conditions, microglial cells will secrete BDNF + activate receptors = Vexpt of kcc2 + activate paccions will cause ct to accomplate inside + : can exit + affect othercells