2017

Citalopram Hydrobromide

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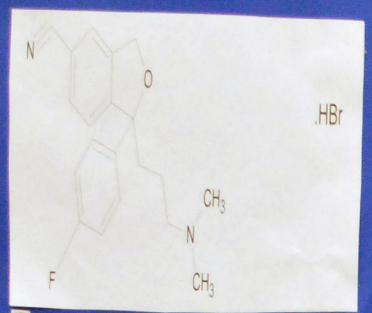
Chem 106-002

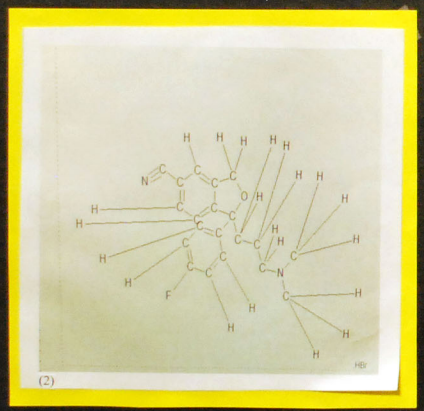


(8)

Generic Name: Citalopram Hydrobromide
Trade Names: Celexa
(1)

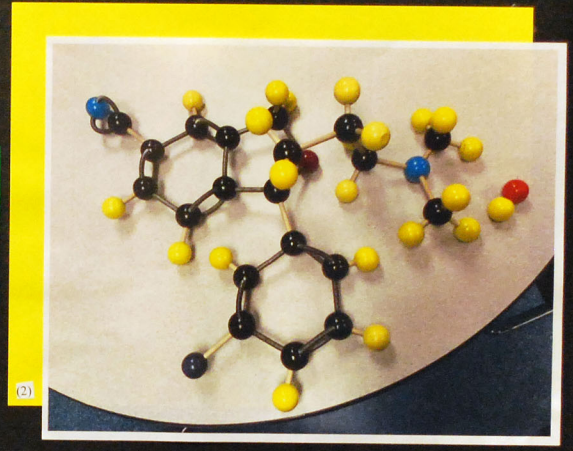
Classification of drug: Selective serotonin-reuptake inhibitor (SSRI)
(1)

Uses: This drug is used to treat depression
(1)



(2)

Dosing: Adult: PO start at 20mg daily, may increase to 40mg daily if needed.
(1)



(2)

Citalopram Hydrobromide enters the body orally.
(1)

What the body does once the drug has been absorbed: This medicine is a selective serotonin reuptake inhibitor (SSRI) with an antidepressant effect presumed to be linked to its inhibition of CNS (central nervous system) presynaptic neuronal uptake of serotonin. Selective serotonin reuptake inhibition mechanism results in the anti-depressant activity of citalopram.
(1)

How the body breaks down the drug: This drug is metabolized through the liver by CYP3A4 and CYP2C9 enzymes. CYP34A is found in the liver and the small intestine and is responsible for the metabolism of more than 50% of medicines. CYP2C9 is an enzyme that also assists in breaking down certain drugs.
(9)

How the body eliminates the drug: This drug is eliminated 20%in the urine and 80% in the bile. (1)

Calculated Molar Mass:

20 moles C (__12.01g__)= 240.20g
1 mole C

21 moles H (__1.01____)= 21.21g
1 mole H

1 mole F (__19.00g__)= 19.00g
1 mole F

2 moles N (__14.01g__)= 28.02g
1 mole N

1 mole O (__16.00g__)= 16.00g
1 mole O

1 mole H (__1.01g___)= 1.01g
1 mole H

1 mole Br (__79.90g__)= 79.90g
1 mole Br

405.34g/mol
(3,4)

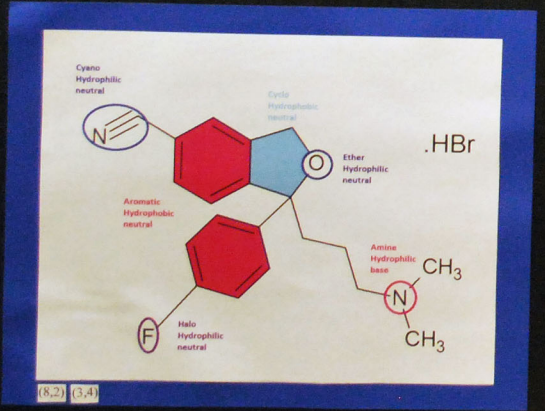
Tablets per chosen dose:
(__20mg___) (__1 tablet__)= 2 tablets
1 dose 10mg
(3,4)

Chemical Names: 1-[3-(Dimenthylamino)propyl]-1-(4-fluorophenyl)-1,3-dihydro-5-isobenzofurancarbonitrile with Hydrobromide; 1-[3-(dimethylamino)propyl]-1-(4-fluorophenyl)-5-phthalancarbonitrile with Hydrobromide; nitalapram with Hydrobromide
(2)

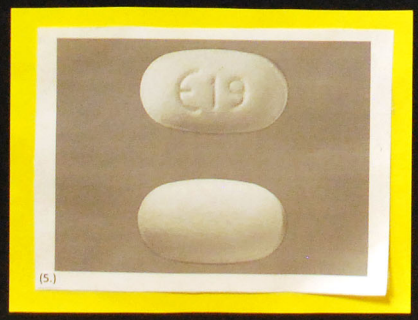
Chemical Formula: $C_{20}H_{21}FN_2O.HBR$
(2)

How Supplied:
Celexa/Citalopram/Citalopram Hydrobromide Oral Sol: 5mL, 10mg
Celexa/Citalopram/Citalopram Hydrobromide Oral Tab: 10mg, 20mg, 40mg
(6)

Literature Value for Molar Mass: mol wt 405.31g/mol
(2)



(8,2) (3,4)



(5.)

Literature Value of water solubility: 0.00588 mg/mL
(7)
Water solubility Literature Value after converting to g/100mL:
_0.00588mg__(__100__)(___1g___) =0.000588 _g__
1 mL (100)(1000mg) 100mL

(3,4)

Water Solubility in words: Insoluble

Citation's

1. Wilson, B. A., Shannon, M. T., & Shields, K. M. (2017). Citalopram Hydrobromide. *Pearson Nurse's Drug Guide 2017* (pp. 357-358). Hoboken, NJ: Pearson Education, Inc.
2. (2013). Citalopram Hydrobromide. In O'Neil, M. J., Heckelman, P. E., Dobbelaar, P. H., & Roman, K. J. (Eds.) *The Merck Index: An Encyclopedia of Chemicals, Drugs, and Biologicals* (p. 414). Cambridge, UK: Royal Society of Chemistry.
3. (2017). In Drake, S. A. (Ed.) *Chemistry 106 Classroom Supplement Fall 2017 Revision*. Champaign, IL: Stipes Publishing L. L. C.
4. Timberlake, K. C. (2018). *Chemistry: An introduction to General, Organic, and Biological Chemistry, 13th ed.* Upper Saddle River, NJ: Pearson Education, Inc.
5. United States National Library of Medicine National Institutes of Health. (2016, May 10). Pill images of Citalopram Hydrobromide. *Pillbox*. Retrieved from http://pillbox.nlm.nih.gov/assets/large/8242F-173-37.19275.0.jpg
6. Physicians' Desk Reference. (2017). Drug summary Citalopram Hydrobromide. *PDR.net*. Retrieved from http://www.pdr.net/drug-summary/Celexa-citalopram-hydrobromide-1325.
7. Genome Alberta, Genome Canada, GenomeQuest Inc., and the Departments of Computing Sciences & Biological Sciences at the University of Alberta specifically the Dr. David Wishart Research Group. (2017, September 01). Citalopram Hydrobromide. *DrugBank*. Retrieved from http://www.drugbank.ca/drugs/DB01918
8. Advanced Chemistry Development, Inc. (2015). ACD/ChemSketch Freeware [Computer Software]. Retrieved from http://www.acdlabs.com/resources/freeware/chemsketch/
9. "Related Information." *Drug Metabolism-The Importance of Cytochrome P450 3A4*. www.medicafe.govt.nz/profs/PUArticles/March2014DrugMetabolismCytochromeP450344A4.htm