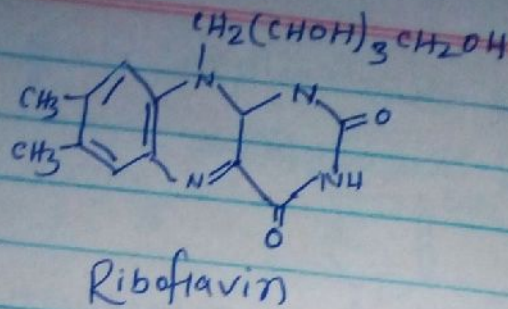


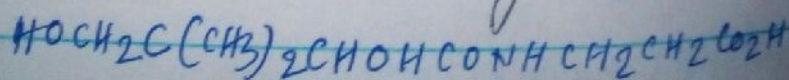
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 Vitamin part-2



- Side chain is a tetrahydroxy derivative.
- Riboflavin contains 5 active hydrogen.
- Riboflavin has the ~~two~~ side-chain contains three chiral centres, and so there are eight optically active form possible.
- Riboflavin is 6,7-dimethyl-9-[D-riboityl]-isalloxazine.

(3) pantothenic acid, (C₉H₁₇NO₅)

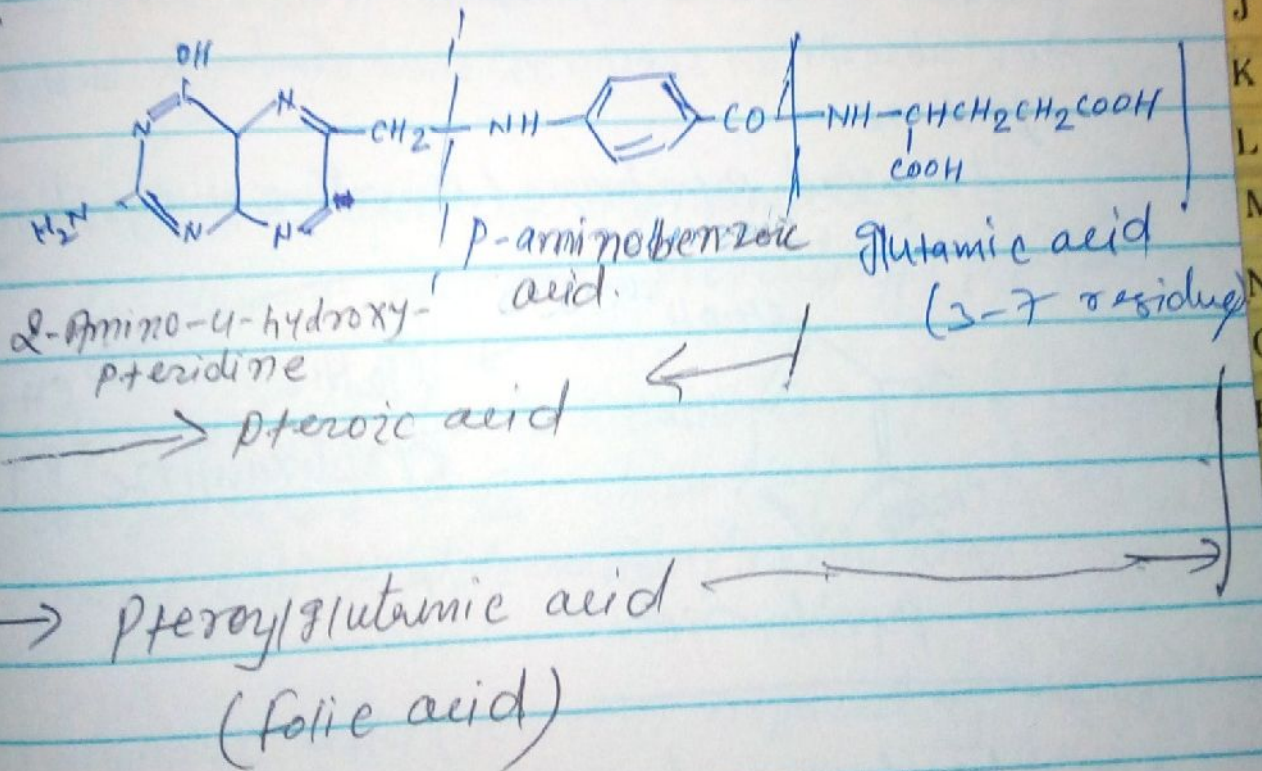
- ↳ chick anti-dermatitis factor
- ↳ pale yellow viscous oil.
- ↳ one carboxylic & two hydroxyl group
- ↳ is leavo rotatory



pantothenic acid.

④ Folic acid;

- ↳ various source - yeast, spinach.
- ↳ effective in the treatment of certain type of anaemia.
- ↳ is pteroylglutamic acid.

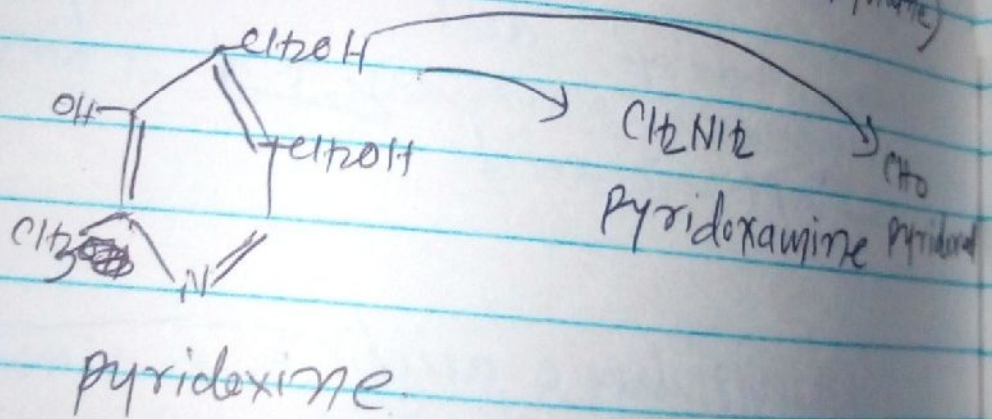


⑤ Biotin (vitamin H)

- ↳ Necessary for growth of yeast.
- ↳ Biotin (Bios II B or β -Biotin), M.P = $230-232^\circ\text{C}$.
- ↳ saturated compound.
- ↳ $\text{C}_9\text{H}_{15}\text{N}_2\text{O}_5\text{CO}_2\text{H}$ (Monocarboxylic acid), saturated

→ Only (+)-biotin isomer is biologically active

- ⑥ Pyridoxine (Adoniam, vitamin B6), $C_8H_{11}NO_3$
- ↳ source rice bran & yeast.
 - ↳ cause dermatitis in rats.
 - ↳ weak base
 - ↳ show 3 active hydrogen.
 - ↳ UV absorption spectrum show similar to 3-hydroxypyridine
 - ↳ called pyridoxine (derivative of pyridine)



→ Pyridoxal, pyridoxamine are more active than pyridoxine.

→ Rat ingested pyridoxine, pyridoxal & pyridoxamine produced by rat.

→ Pyridoxine, pyridoxal & pyridoxamine collectively referred to as vitamin B₆.

→ B₆ interconvertible in the body.

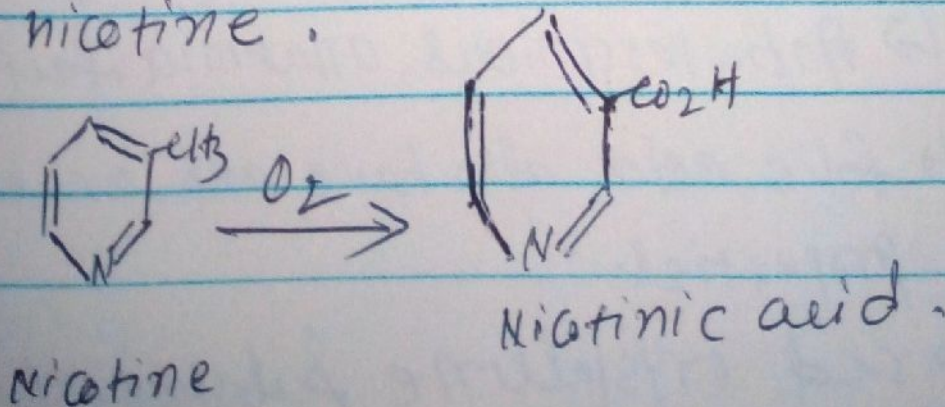
→ Aldehyde & amine have been shown to have be the main constituents of naturally occurring vitamin B₆.

⑦ Nicotinic acid & nicotinamide;

↳ Human pellagra-preventing (P.P) factor.

↳ Nicotinamide is part of Coenzyme co dehydrogenase I & II, which play a part in many biological reaction/oxidations.

↳ Nicotinic acid (Niacin) prepared by the oxidation of nicotine.



- ↳ Isolated from liver extract.
- ↳ 6 element present - C, H, O, N, P, Co
- ↳ B₁₂ first natural product found to contains cobalt.
- ↳ C₅₂H₈₈CoN₁₄O₁₄P. (M. wt - 1355)
- ↳ cobalt in trivalent state
 - ↳ Indicated by magnetic susceptibility measurements
 - & infrared measurements show the presence of cyano group attached to cobalt.
- ↳ optically active.
- ↳ Behave as polyacidic base.
- ↳ form hexaperchlorate.
- ↳ Show maxima absorption at 278, 361 & 550 nm.
- ↳ B₁₂ + HCl → Ammonia.