

Ascorbic Acid (vitamin C)



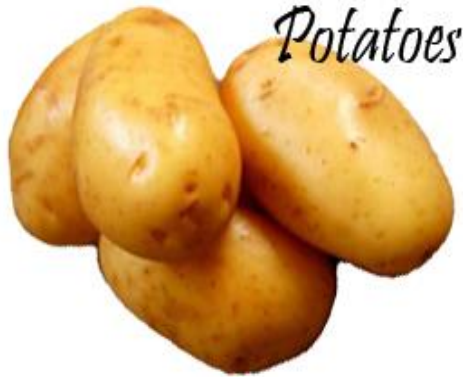
What is vitamin C?

- **It is one of the most abundant vitamins that is required in large amounts by humans.**

Dietary sources :

- **Vitamin C is found in a wide variety of fruits and vegetables.**
- **Fats and meat are lacking of vit.C except liver**





Potatoes



Cherries



Kale



Pineapple



Strawberries



Citrus Fruits



Kiwi



Blackcurrants



Cauliflower



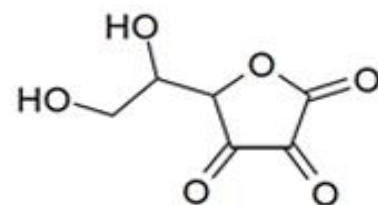
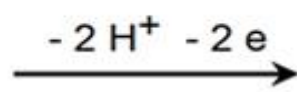
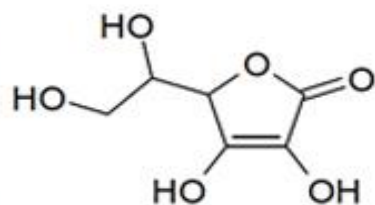
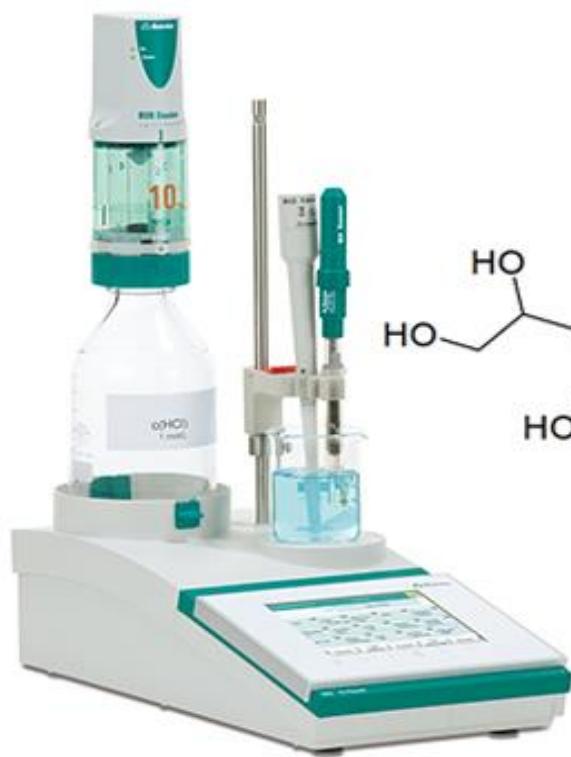
Vitamin C chemistry



- **It forms white crystals which are stable in air**



- In solution, it is easily oxidized into dehydroascorbic acid and this is the basis for analysis of vitamin C.



- **It is stable in acidic solutions**
- **Both reduced and oxidized forms are biologically active**

The only animals that can not synthesize ascorbic acid are:

- **Guinea pigs**
- **Rare species of bats**
- **Gorillas**



- **Chimps**
- **Monkeys**
- **Humans**

Recommended dietary requirements of vitamin C:

- **1-3 months infants: 30 mg/day**
- **Growing boys: 80 mg/day**
- **Pregnant and lactating women: 100 mg/day**



Side effects of Vitamin C over-dose:

- **Diarrhea**
- **Redness of skin**
- **Headache**
- **Nausea**
- **Side or lower back pain**
- **Stomach cramps**



scurvy



Functions of ascorbic acid:

- **Collagen synthesis**
- **Nor-epinephrine synthesis**
- **Iron absorption**
- **Steroid hormone synthesis**
- **Antioxidant**
- **Improves nitric oxide activity in blood vessels dilation**
- **Reduce sorbitol accumulation in eyes, nerves and kidneys**



- **Drug metabolism and detoxification**
- **Carnitine synthesis**
- **Increase macrophage activity**
- **Cancer prevention**
- **Formation of bile**
- **Certain vitamin activation: folic acid**
- **Vitamin E recycling**
- **Antihistamine effect**



THANK YOU

