PopGen ▷ Vitamin C

Ingredients - Antioxidants

Vitamin C 25 mg

Vitamin E 5 IU

Green Tea extract 1 mg

Vitamin C is essential for humans for several reasons:

Immune function - It helps stimulate the production of white blood cells, which defend the body against infection and disease.

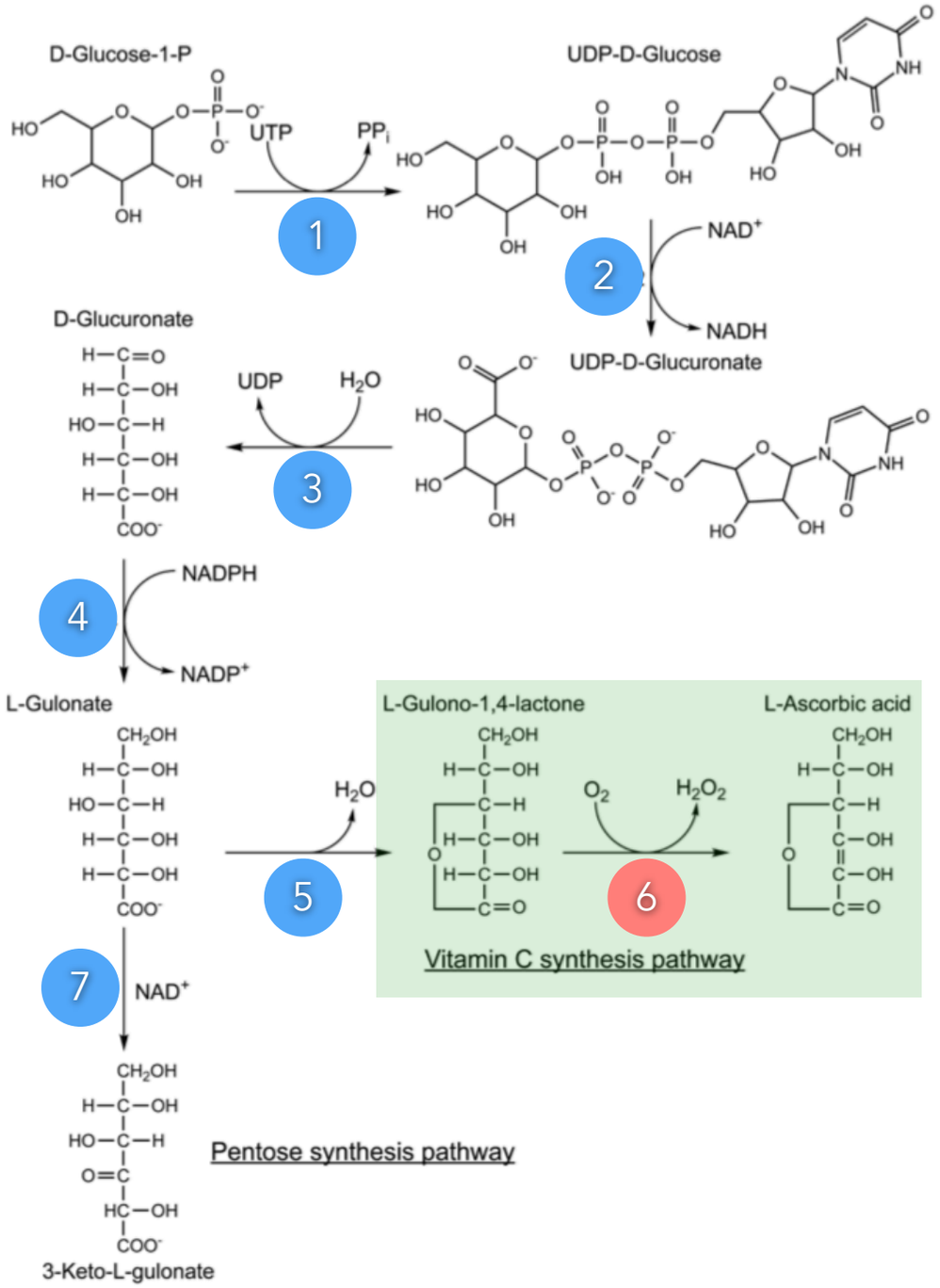
Antioxidant properties - Vitamin C acts as an antioxidant, neutralising harmful free radicals in the body that can damage cells and contribute to ageing and diseases such as cancer, heart disease and arthritis.

Collagen production - It plays a vital role in the synthesis of collagen, a protein necessary for the health of skin, tendons, ligaments and blood vessels. Collagen provides structural support and helps wounds to heal.

Iron absorption - Vitamin C improves the absorption of non-haem iron (found in plant foods) in the gut, helping to prevent iron deficiency anaemia.

Reducing the risk of diseases - Adequate vitamin C intake has been linked to a lower risk of chronic diseases, including certain cancers, cardiovascular disease and eye diseases such as cataracts. Some studies suggest that vitamin C may play a role in supporting cognitive function and reducing the risk of certain neurodegenerative diseases.

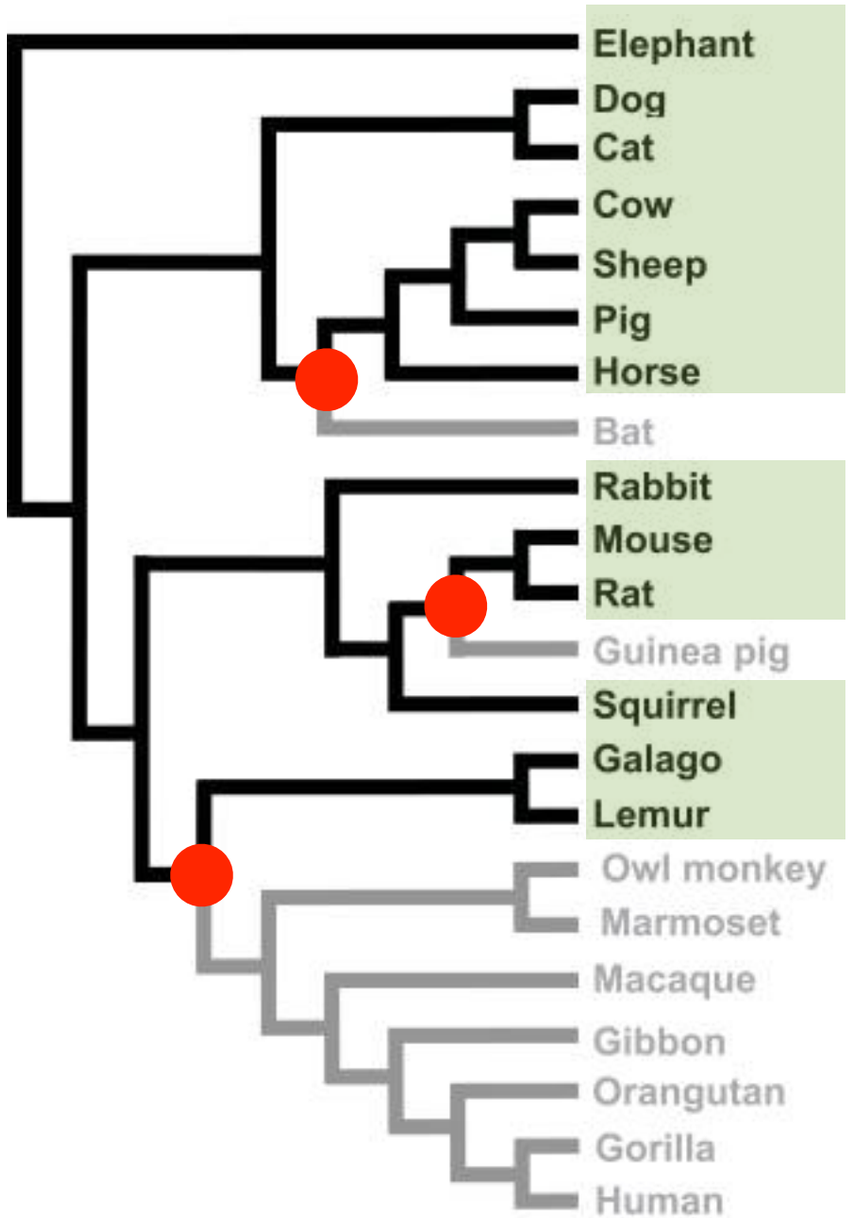
Because the **human body can't make vitamin C**, it's important to get it from food.



Biochemical **pathway of vitamin C synthesis** in vertebrates.

1. UDP-glucose pyrophosphorylase (EC 2.7.7.9)
2. UDP-glucose dehydrogenase (EC 1.1.1.22)
3. UDP-glucuronidase (EC 3.2.1.31)
4. Glucoronate reductase (EC 1.1.1.19)
5. Gluconolactonase (EC 3.1.1.17)
6. **L-gulonolactone oxidase (GLO, EC 1.1.3.8)**
7. L-gulonate 3-dehydrogenase (EC 1.1.1.45)

Source: Drouin et al. (2011) The Genetics of Vitamin C Loss in Vertebrates



Phylogenetic distribution of the ability to **synthesize vitamin C in mammals**. Lineages able to synthesize vitamin C are in black, those incapable are in gray.

Drouin et al. (2011) The Genetics of Vitamin C Loss in Vertebrates. Curr Genomics 12(5): 371-378

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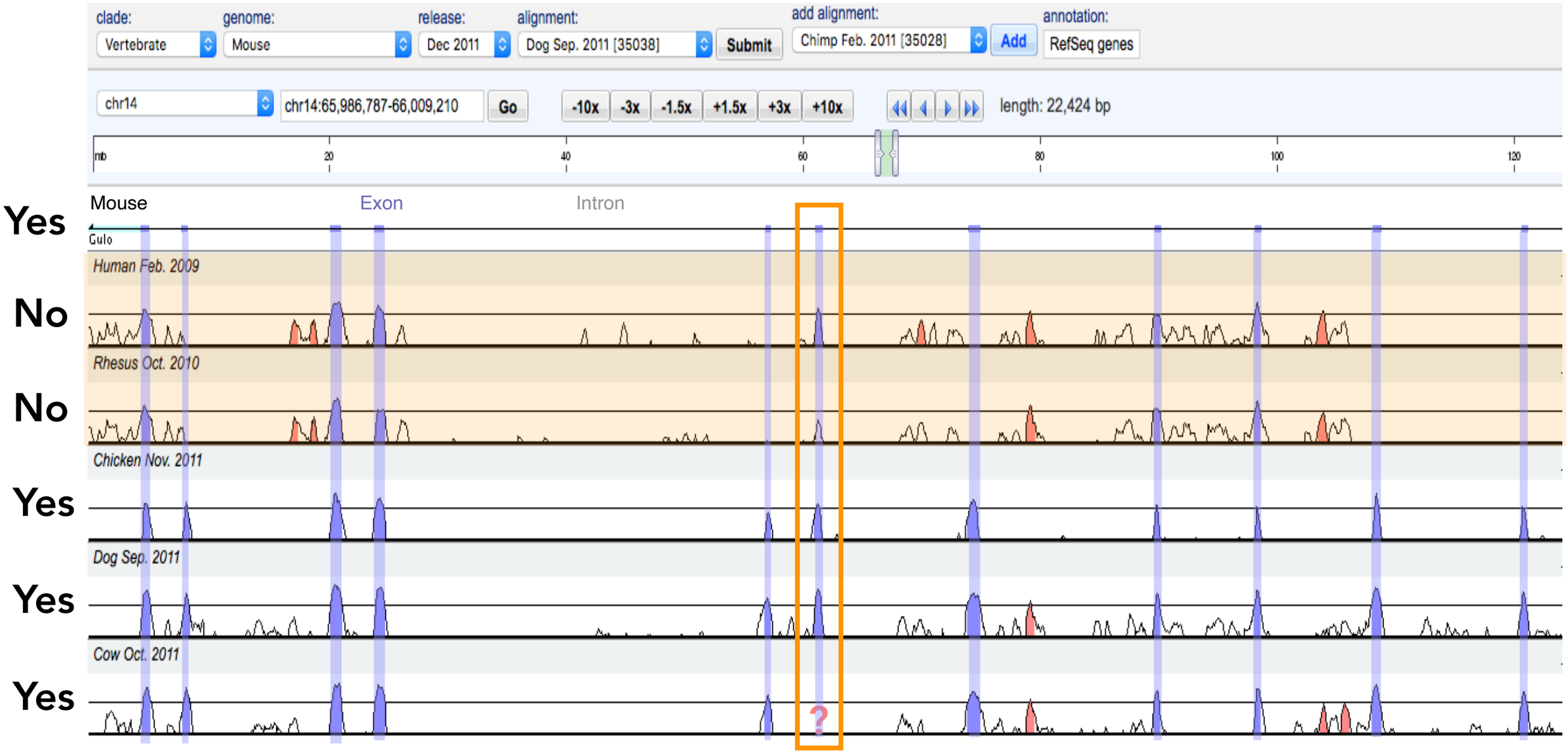

Kakadu Plums (5300mg/100g)

Blackcurrants (181mg/100g)

Green Chili Pepper (109mg/100g)

Kiwis (93mg/100g)

Broccoli (89mg/100g)

Brussels sprouts (85mg/100g)

Lemon (77mg/100g)

Lychees (72mg/100g)

Strawberries (57mg/100g)

Orange (53mg/100g)

Cats are a group of animals that can make their own vitamin C. Unlike humans, whose bodies "lack" the enzyme needed to synthesise vitamin C (L-gulonolactone oxidase), cats have this enzyme and can **make their own vitamin C in their liver**.

This ability in cats is one reason why, under normal circumstances, they do not require dietary supplementation with vitamin C. Their bodies can produce the vitamin internally, provided they eat a balanced diet that meets their nutritional needs.

Cats are obligate carnivores and their primary source of energy comes from the proteins and fats found in meat. Cat's are very good at converting various nutrients, especially those from animal-based proteins, into **glucose** through a process called **gluconeogenesis**.