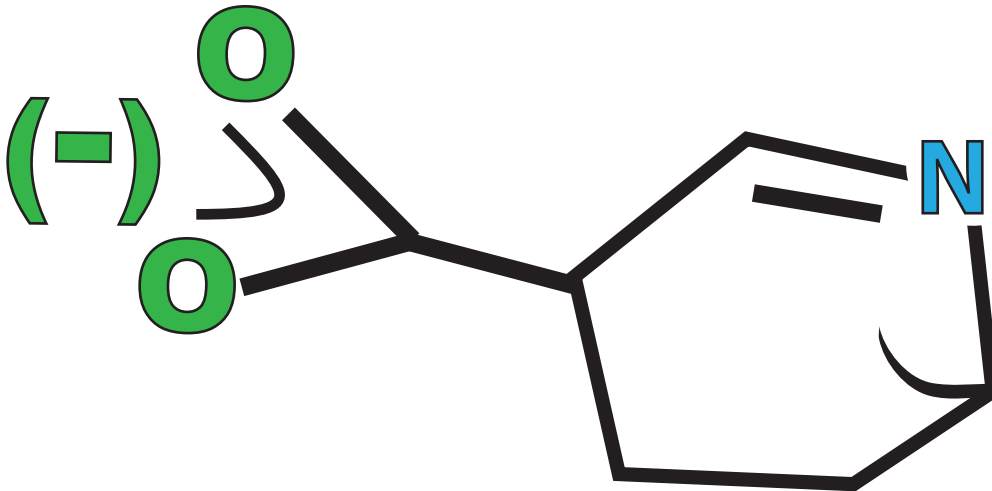
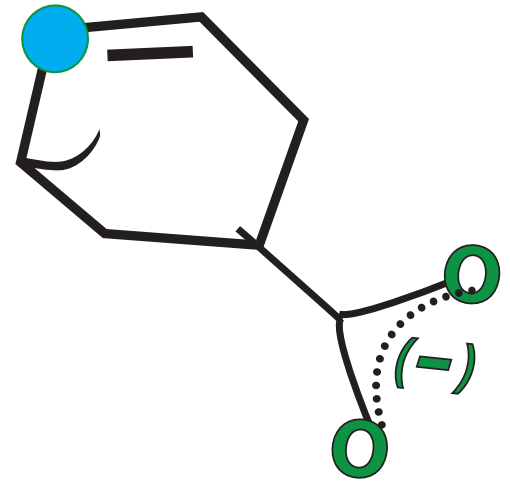


# Vitamin B 3

nicotinic acid

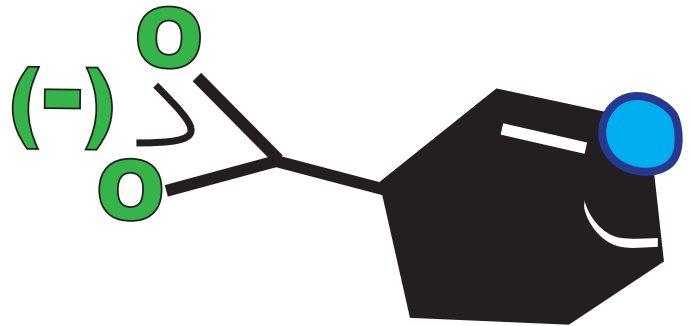
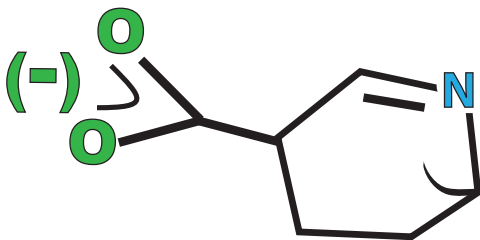
the "Niacin Fish"

pyridine-3-carboxylic acid, nicotinic acid,  
nicotinamide, niacinamide, vitamin B3



Carboxyl to a One Nitrogen  
One Double Bond Ring

Niacin, also known as vitamin B3 or nicotinic acid, is a water-soluble vitamin that prevents the deficiency disease pellagra. It is an organic compound with the molecular formula  $C_6H_5NO_2$ . It is a derivative of pyridine, with a carboxyl group (COOH) at the 3-position. Other forms of vitamin B3 include the corresponding amide, nicotinamide ("niacinamide"), where the carboxyl group has been replaced by a carboxamide group (CONH<sub>2</sub>), as well as more complex amides and a variety of esters. The terms niacin, nicotinamide, and vitamin B3 are often used interchangeably to refer to any one of this family of molecules, since they have a common biochemical activity.



Niacin is converted to nicotinamide and then to NAD and NADP in vivo. Although the two are identical in their vitamin activity, nicotinamide does not have the same pharmacological effects as niacin, which occur as side-effects of niacin's conversion. Thus nicotinamide does not reduce cholesterol or cause flushing,[1] although nicotinamide may be toxic to the liver at doses exceeding 3 g/day for adults.[2] Niacin is a precursor to NADH, NAD<sup>+</sup>, NADP<sup>+</sup> and NADPH, which play essential metabolic roles in living cells.[3] Niacin is involved in both DNA repair, and the production of steroid hormones in the adrenal gland.

Niacin is one of five vitamins associated with a pandemic deficiency disease: these are niacin (pellagra), vitamin C (scurvy), thiamin (beriberi), vitamin D (rickets), and vitamin A deficiency, a syndrome which has no common name but is one of the most common symptomatic deficiencies worldwide.

