Hemoglobin (haemoglobin,[a] Hb or Hgb) is a protein containing iron that facilitates the transport of oxygen in red blood cells.The molecule also carries the important regulatory molecule nitric oxide bound to a thiol group in the globin protein, releasing it at the same time as oxygen.[10] Hemoglobin is also found in other cells, including in the A9 dopaminergic neurons of the substantia nigra, macrophages, alveolar cells, lungs, retinal pigment epithelium, hepatocytes, mesangial cells of the kidney, endometrial cells, cervical cells, and vaginal epithelial cells.[11] In these tissues, hemoglobin absorbs unneeded oxygen as an antioxidant, and regulates iron metabolism.[12] Excessive glucose in the blood can attach to hemoglobin and raise the level of hemoglobin A1c.[13] Hemoglobin and hemoglobin-like molecules are also found in many invertebrates, fungi, and plants.[14] In these organisms, hemoglobins may carry oxygen, or they may transport and regulate other small molecules and ions such as carbon dioxide, nitric oxide, hydrogen sulfide and sulfide.