

The present invention provides novel eukaryotic DNA sequences coding for native protoporphyrinogen oxidase (protox) or modified forms of the enzyme which are herbicide tolerant. Plants having altered protox activity which confers tolerance to herbicides are also provided. These plants may be bred or engineered for resistance to protox inhibitors *via* mutation of the native protox gene to a resistant form or through increased levels of expression of the native protox gene, or they may be transformed with modified eukaryotic or prokaryotic protox coding sequences or wild type prokaryotic protox sequences which are herbicide tolerant. Plant genes encoding wild-type and altered protox, purified plant protox, methods of isolating protox from plants, and methods of using protox-encoding genes are also disclosed.