Apocarotenoids: A new carotenoid-derived pathway

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 Carotenoids are precursors of carotenoid derived molecules termed apocarotenoids, which include isoprenoids with important functions in plantenvironment interactions such as the attraction of pollinators and the defense against pathogens and herbivores. Apocarotenoids also include volatile aromatic compounds that act as repellents, chemoattractants, growth simulators and inhibitors, as well as the phytohormones abscisic acid and strigolactones. In plants, apocarotenoids can be found in several types of plastids (etioplast, leucoplast and chromoplast) and among different plant tissues such as flowers and roots. The structural similarity of some flower and spice isoprenoid volatile organic compounds (?-ionone and safranal) to carotenoids has led to the recent discovery of carotenoidspecific cleavage oxygenases, including carotenoid cleavage dioxygenases and 9-cis-epoxydioxygenases, which tailor and transform carotenoids into apocarote