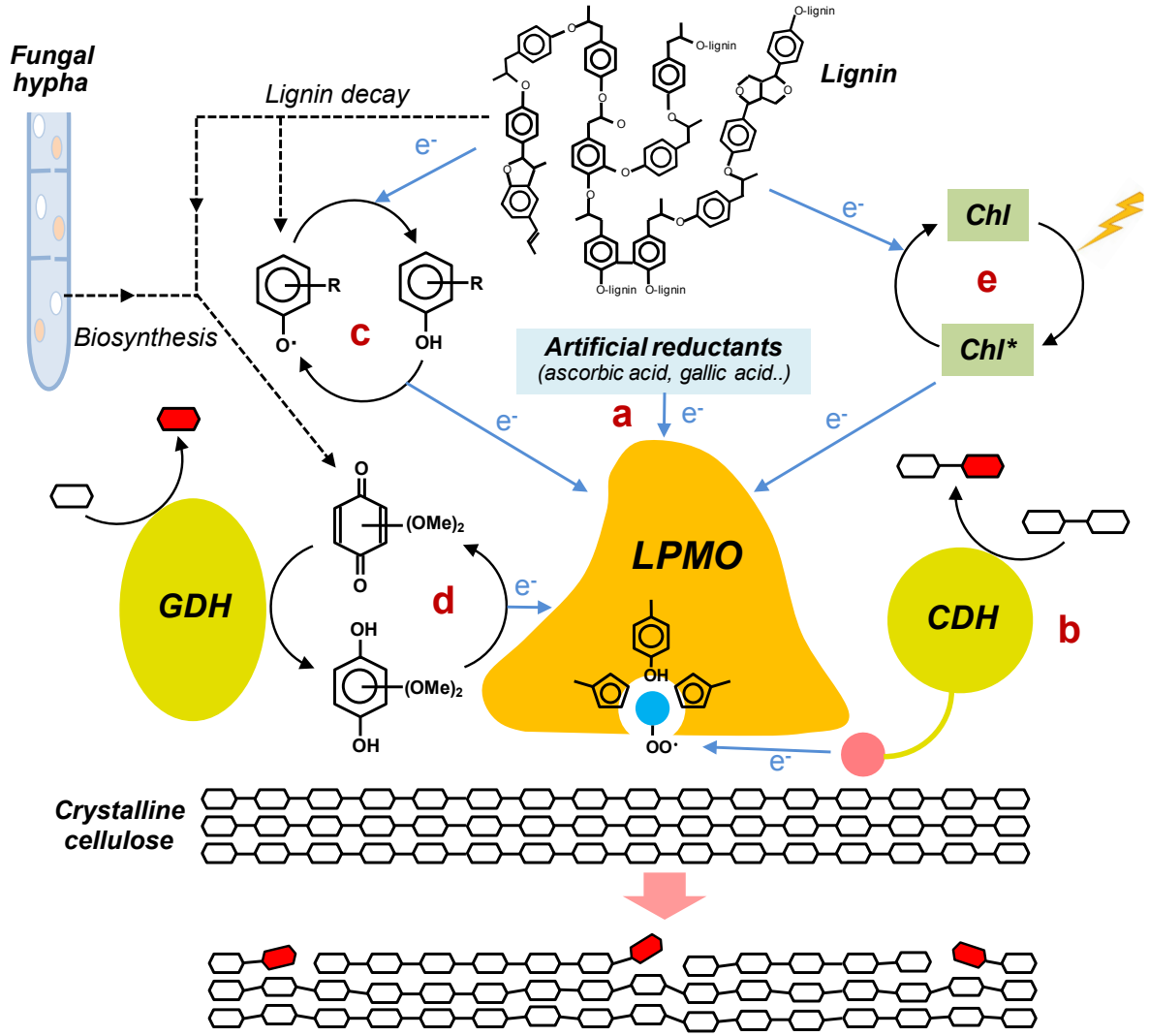

Fig. 6. Different LPMO activation routes. After initial studies, where LPMO activity was detected using artificial reductants, several mechanisms have been shown to operate "fueling" electrons to the LPMO copper cofactor for the oxidative breakdown (red units) of crystalline cellulose. These alternative mechanisms involve other enzymes, such as CDH (being directly oxidized by LPMO) and GDH (acting through redox cycling of quinones derived from lignin decay or fungal metabolism), as well as lignin-derived phenoxy radicals (being reduced by lignin) and light-activated photosynthetic pigments (Chl). Adapted from Kracher et al. (2016) and Martínez (2016).