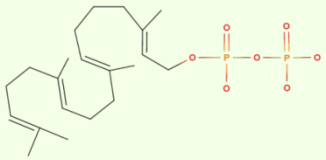
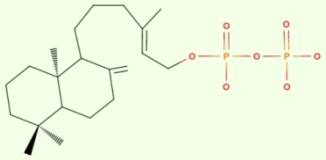
GA Biosynthesis



geranylgeranyl pyrophosphate (GGPP)

CPS

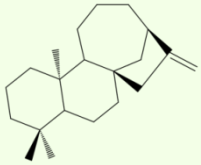
ga1-2 mutation disrupts the function of *ent*-copalyl diphosphate synthase (CPS)



ent-copalyl diphosphate (CDP)

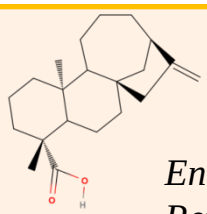
Chloroplast

KS



ent-kaurene

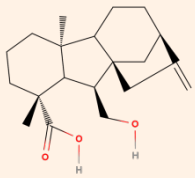
EKO



ent-kaurenoic acid

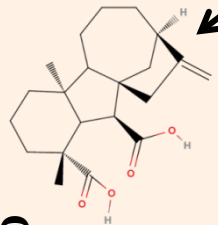
Endoplasmic Reticulum

KAO

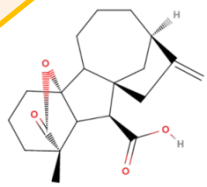


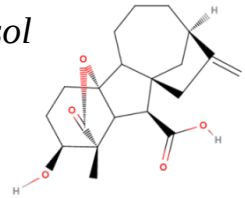
GA_{12}-aldehyde

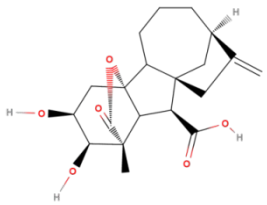
GA7ox



Cytosol







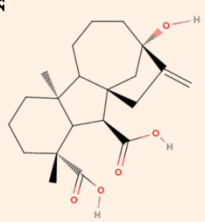
GA_{12} → GA_9 → GA_4 → GA_{34}

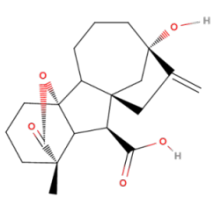
GA13ox

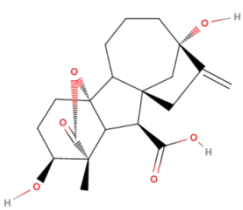
GA20ox

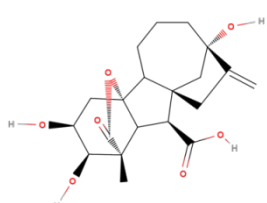
GA3ox

GA2ox









GA_{53} → GA_{20} → GA_1 → GA_8

Enzyme	Arabidopsis Gene Name
ent-copalyl diphosphate synthase (CPS)	*GA1*
ent-kaurene synthase (KS)	*GA2*
ent-kaurene 19-oxidase (EKO)	*GA3*
ent-kaurenoic acid oxidase (KAO)	?
GA 7-oxidase (GA7ox)	?
GA 13-oxidase (GA13ox)	?
GA 20-oxidase (GA20ox)	*GA5*
GA 3-oxidase (GA3ox)	*GA4*
GA 2-oxidase (GA2ox)	?