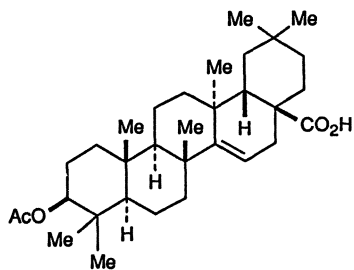
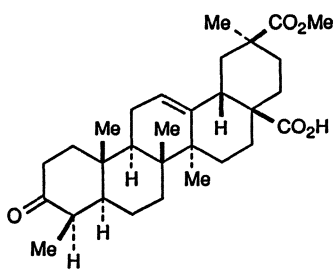


Acinosolic acid (97-13)

Furthermore, 3-acetyloleanolic acid [9] and 3-acetylaleuritolic acid (97-14) [10] were found in the seeds of *P. americana*. 3-Oxo-30-carbomethoxy-23-norolean-12-en-28-oic acid (97-15), obtained by the hydrolysis of the saponins from the root of *P. americana*, was determined as an artifact [11].

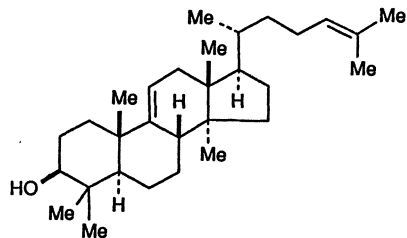


Acetylaleuritolic acid (97-14)

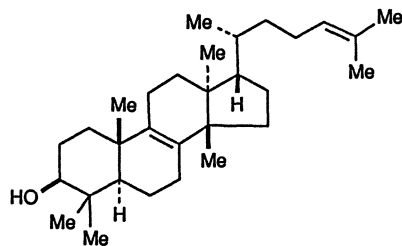


3-Oxo-30-carbomethoxy-23-norolean-12-en-28-oic acid (97-15)

Steroid compounds α -spinasterol and Δ^7 -stigmasterol were found in the root of *P. americana* [10]. A number of triterpene alcohols were detected in the seeds and identified as cycloartenol, 24-methylenecycloartenol, parkeol (97-16), 24-methylene-24-dihydroparkeol, lanosterol, euphol (97-17), butyrospermol (97-18), tirucallol (97-19), tirucalla-7,24-dienol, dammaradienol, 24-methylenedammarenol, α -amyrin, β -amyrin, lupeol, germanicol (97-20), taraxasterol (97-21), ψ -taraxasterol (97-22), taraxerol (97-23), and myricadiol (97-24). Tirucalla-7,24-dienol and butyrospermol are the predominant components of the seed oil of *P. americana* [12].



Parkeol (97-16)



Euphol (97-17)