

Spot test results for some common lichen secondary metabolites, in alphabetic order. **RENR Students: You may bring this chart into quizzes.**

Metabolite	PD	K	C	KC	UV	Metabolite Type
alectorialic acid	yellow, dark	yellow, pale	red	red	yellow	β -orcinol dibenzyl esters
alectoronic acid	-	-	-	pink	blue-white	orcinol depsidones
anthraquinones	-	-	-	purple-red	-	
atranorin	yellow, pale	yellow, pale	-	-	- or dull whitish	β -orcinol depsides
baeomycesic acid	yellow, dark	yellow, pale	-	- or yellow	yellow	β -orcinol depsides
barbatic acid complex	-	-	- or orange	gold or pink-orange	white, faint	β -orcinol depsides
barbatolic acid	yellow	yellow	-	-	-	β -orcinol dibenzyl esters
cryptochlorophaeic acid	-	reddish, slow	purple or pink	purple or pink	white, dull	orcinol depsides
divaricatic acid	-	-	-	-	white	orcinol depsides
evernic acid	-	-	-	-	white	orcinol depsides
fumarprotocetraric acid	EtOH - slow yellow to orange to red, S - orange to red	brown dingy	-	-	-	β -orcinol depsidones
grayanic acid	-	-	-	-	violet	orcinol depsidones
gyrophoric acid	-	-	pink	red	white	orcinol depsides
homosekikaic acid	-	-	-	-	white, faint	orcinol depsides
lecanoric acid	-	-	pink	pink	-	orcinol depsides
lobaric acid	-	-	-	red or violet	white	orcinol depsidones
merochlorophaeic acid	-	-	pink-violet	pink-violet	white	orcinol depsides
norstictic acid	yellow-orange	red, dark	-	not discernable	-	β -orcinol depsidones
olivetoric acid	-	-	red	red	white	orcinol depsides
physodic acid	-	-	-	pink	whitish	orcinol depsidones
pinastric acid	-	-	-	-	-	pulvinic acid derivatives
psoromic acid	yellow, bright	-	-	-	white	β -orcinol depsidones
salazinic acid	orange	red, rusty	-	not discernable	-	β -orcinol depsidones
sphaerophorin	-	-	-	-	white	orcinol depsides
squamatic acid	-	-	-	-	blue-white	β -orcinol depsides
stictic acid complex	orange	yellow	-	-	-	β -orcinol depsidones
thamnolic acid	orange	yellow, dark	-	-	-	β -orcinol depsides
usnic acid	-	-	yellow, pale	yellow, oily	absorbs	
vulpinic acid	-	-	-	-	-	pulvinic acid derivatives

Spot test results for some common lichen secondary metabolites and examples of Alberta lichens commonly producing those metabolites, in order of colour reaction. **RENR Students: You may bring this chart into quizzes.**

Metabolite	PD	K	C	KC	UV	Common Alberta examples (except where noted)
pinastric acid	-	-	-	-	-	<i>Vulpicida pinastri</i>
vulpinic acid	-	-	-	-	-	<i>Letharia vulpina</i>
squamatic acid	-	-	-	-	blue-white	<i>Cladonia sulphurina</i> , <i>cenotea</i> or <i>crispata</i>
grayanic acid	-	-	-	-	violet	<i>Cladonia grayi</i>
divaricatic acid	-	-	-	-	white	<i>Evernia mesomorpha</i> , <i>Ramalina dilacerata</i> , <i>Parmeliopsis (medulla)</i>
evernic acid	-	-	-	-	white	<i>Ramalina obtusata</i> , <i>pollinaria</i>
sphaerophorin	-	-	-	-	white	<i>Cladonia imbricaria</i>
homosekikaic acid	-	-	-	-	white, faint	<i>Cladonia rei</i>
physodic acid	-	-	-	pink	whitish	<i>Hypogymnia physodes</i> , <i>tubulosa</i>
anthraquinones	-	-	-	purple-red	-	<i>Xanthoria</i> , <i>Xanthomendoza</i>
alectoronic acid	-	-	-	pink	blue-white	<i>Tuckermannopsis americana</i> , <i>Alectoria sarmentosa</i>
lobaric acid	-	-	-	red or violet	white	<i>Stereocaulon grande</i>
barbatic acid complex	-	-	- or orange	gold or pink-orange	white, faint	<i>Cladonia macilenta</i>
lecanoric acid	-	-	pink	pink	-	<i>Melanelixia subaurifera</i>
gyrophoric acid	-	-	pink	red	white	<i>Peltigera aphthosa</i> , <i>Melanelia tominii</i>
merochlorophaeic acid	-	-	pink-violet	pink-violet	white	<i>Cladonia merochlorophaea</i>
olivetoric acid	-	-	red	red	white	<i>Bryocaulon divergens</i> (rare)
usnic acid	-	-	yellow, pale	yellow, oily	absorbs	<i>Usnea</i>
cryptochlorophaeic acid	-	reddish, slow	purple or pink	purple or pink	white, dull	<i>Cladonia cryptochlorophaea</i> (not in AB)
fumarprotocetraric acid	EtOH - slow yellow to orange to red, S - orange to red	brown dingy	-	-	-	<i>Cladonia chlorophaea</i> , <i>coniocraea</i> , <i>cornuta</i> , <i>gracilis</i> , <i>Cetraria islandica</i> , <i>Melanohalea septentrionalis</i>
salazinic acid	orange	red, rusty	-	not discernable	-	<i>Parmelia sulcata</i>
stictic acid complex	orange	yellow	-	-	-	<i>Baeomyces rufus</i>
thamnolic acid	orange	yellow, dark	-	-	-	<i>Imshaugia</i> , <i>Icmadophila ericetorum</i> , <i>Cladonia digitata</i>
barbatolic acid	yellow	yellow	-	-	-	<i>Bryoria capillaris</i>
psoromic acid	yellow, bright	-	-	-	white	<i>Cladonia dahliana</i> (syn. <i>symphyrcarpa chemotype II</i>)
alectorialic acid	yellow, dark	yellow, pale	red	red	yellow	<i>Bryoria capillaris</i>
atranorin	yellow, pale	yellow, pale	-	-	- or dull whitish	<i>Physcia</i> (cortex, sometimes medulla)
norstictic acid	yellow-orange	red, dark	-	not discernable	-	<i>Lobaria pulmonaria</i>
baeomycesic acid	yellow, dark	yellow, pale	-	- or yellow	yellow	None - found in <i>Usnea pacificana</i> to the west