



## Tannins and Terpenoids as Major Precursors of Suwannee River Fulvic Acid: Usgs Scientific Investigations Report 2004-5276

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Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.Suwannee River fulvic acid (SRFA) was fractionated into 7 fractions by normal-phase chromatography on silica gel followed by reverse-phase fractionation on XAD-8 resin that produced 18 subfractions. Selected major subfractions were characterized by <sup>13</sup>C-nuclear magnetic resonance (NMR), infrared spectrometry, and elemental analyses. <sup>13</sup>C-NMR spectra of the subfractions were more indicative of precursor structures than unfractionated SRFA, and gave spectral profiles that indicated SRFA mass was about equally split between tannin precursors and terpenoid precursors. Lignin precursors were minor components. Synthesis of <sup>13</sup>C-NMR data with elemental data for subfractions derived from both tannin and terpenoid precursors revealed high ring contents and low numbers of carbon per rings which is indicative of fused ring structures that are extensively substituted with carboxyl and methyl groups. These results ruled out extended chain structures for SRFA. This information is useful for determining sources and properties of fulvic acid in drinking water supplies as tannins are more reactive with chlorine to produce undesirable disinfection by-products than are terpenoids.



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