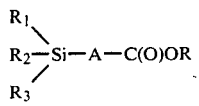
distilled water (care being taken not to let the column run dry during or following conditioning). The vacuum is then turned off. Enough distilled water to fill the cartridge $\frac{2}{3}$ of the way is then introduced. A 15 milliliter standard polypropylene (serological grade) reservoir is then friction fitted to the top of the extract column via an adaptor. Five ml of distilled water is then introduced into the column along with the hydrolized urine sample. This entire solution is then aspirated through the column at a flow rate of 5 ml/minute (14 inches of mercury). The reservoir is rinsed with a small portion of distilled water after it has run dry. The extraction column is allowed to run dry and then the reservoir and the adaptor are removed. At this point one observes a colored zone of about 2 millimeters at the top of the cartridge. This zone consists of the extracted THC-COOH as well as a large amount of co-extracted impurities. These impurities are washed from the bonded phase by aspirating through the column at a flow rate of 5 ml/minute two one ml aliquots of 50% acetonitrile/50% 0.1N HCL in water solution. The colored zone at the top of the column is displaced from the column by the first aliquot of the wash solution. The column is allowed to air dry for one minute before the vacuum is turned off. Next, a rack containing a 3 ml glass sample collection tube is placed in the vacuum manifold in such a way that the eluant from the solid phase extraction column is collected. The vacuum is again adjusted so that the flow rate of 5 ml/minute is obtained (14 inches mercury) and three 0.5 ml aliquots of 100% acetonitrile is introduced to the column. Once the column has dried the vacuum is turned off and the sample collection tube containing the concentrated THC-COOH sample eluant is removed from the rack in the vacuum manifold.

If further cleanup is desirable, a 1 ml cyanopropyl bonded phase cartridge (for example, Product No. 7021 available from J. T. Baker Chemical Co. of Phillipsburg, N.J.) can be employed. The eluant from the first extraction cartridge is diluted (1 to 8 dilution) with 0.1N HCL and aspirated through the cyanopropyl cartridge. The column is washed with two 0.5 ml aliquots of a 20% acetonitrile/80% 0.1N HCL solution. The extracted, purified THC-COOH is then eluted from the column with three 100 microliter aliquots of 100% acetonitrile.

The bonded phase of this invention provide a much faster, easier and more efficient sample preparation technique, that is concentration of THC-COOH in the sample, than is possible with heretofore available bonded phases.

We claim:

1. In a solid phase extraction process for the cleanup and purification of 11-nor-Δ-9-tetrahydrocannabinol-9-carboxylic acid from a urine sample, the improvement comprising employing a solid phase bonded silica reaction product of silica and a carboalkoxyalkyl silane of the formula



in which R is an alkyl radical of from 1 to 3 carbon atoms, A is an alkylene group of from 2 to 4 carbon atoms and R_1, R_2 and R_3 are the same or different and are selected from the group consisting of halogen, an alkoxy group of from 1 to 6 carbon atoms, an alkoxyalkoxy group of from 2 to 5 carbon atoms and an alkyl group of from 1 to 3 carbon atoms, with the proviso that at least one of R_1, R_2 and R_3 is other than an alkyl group.

2. A process of claim **1** wherein the silica reactant is selected from the group consisting of particulate silica gel having an average particle diameter of from about 3 to about 70 microns and an average pore size of from about 50 to about 1000 Angstrom units, and particulate controlled pore glass having an average particle diameter of from about 37 to about 177 microns and an average pore size of from about 40 to about 1000 Angstrom units.

3. A process of claim **2** wherein the particulate silica gel has an average particle diameter of from about 20 to about 70 microns and an average pore size of from about 50 to about 500 Angstrom units.

4. A process of claim **3** in which the carboalkoxyalkyl silane reactant is a compound in which R is methyl, A is ethylene and R_1, R_2 and R_3 are selected from the group consisting of chlorine and methyl.

5. A process of claim **4** in which the carboalkoxyalkyl silane reactant is selected from the group consisting of carbomethoxyethyl trichlorosilane, carbomethoxyethyl dichloromethylsilane and carbomethoxyethyl dimethylchlorosilane.

6. A process of claim **5** in which the carboalkoxyalkyl silane reactant is carbomethoxyethyl trichlorosilane.

7. A process of claim **1** wherein the silica reactant is particulate silica gel having an average particle diameter of from about 3 to about 70 microns and an average pore size of from about 50 to about 1000 Angstrom units.

8. A process of claim **7** in which the carboalkoxyalkyl silane reactant is a compound in which R is methyl, A is ethylene and R_1, R_2 and R_3 are selected from the group consisting of chlorine and methyl.

9. A process of claim **7** in which the carboalkoxyalkyl silane reactant is selected from the group consisting of carbomethoxyethyl trichlorosilane, carbomethoxyethyl dichloromethylsilane and carbomethoxyethyl dimethylchlorosilane.

10. A process of claim **9** in which the carboalkoxyalkyl silane reactant is carbomethoxyethyl trichlorosilane.

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